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Improvement of the Mississippi River. Report of the hearing held February 3, 1904... also report of a convention held October 27-28, 1903, at New Orleans, for the consideration of that subject.

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IMPROVEMENT OF THE MISSISSIPPI RIVER.

REPORT OF THE HEARING HELD FEBRUARY 3, 1904, BEFORE THE COMMITTEE ON COMMERCE IN RELATION TO THE IMPROVEMENT OF THE MISSISSIPPI RIVER, EMBODYING ALSO REPORT OF A CONVENTION HELD OCTOBER 27-28, 1903, AT NEW ORLEANS, FOR THE CONSIDERATION OF THAT SUBJECT.

APRIL 4, 1904.—Presented by Mr. BERRY and ordered to be printed.

COMMITTEE ON COMMERCE, UNITED STATES SENATE.
Washington, D. C., February 3, 1904.

The committee met at 10.30 o'clock a. m.

Present: Senators Frye (chairman), Nelson, Gallinger, Depew, Perkins, Foster of Washington, Quarles, Alger, Berry, Clay, Mallory, and Foster of Louisiana.

There were also present Hon. James P. Clarke, Senator from Arkansas, and Hon. Adolph Meyer, Representative from Louisiana; Capt. Patrick Henry, of Arkansas; Hon. W. W. Heard, governor of Louisiana; Mr. Murray Smith, of Mississippi; Mr. Leroy Percy, of Mississippi, and a large delegation, representing the Interstate Mississippi River Improvement and Levee Association; Mr. Alexander G. Cochran, of St. Louis, and Mr. John L. Vance, of Ohio.

Capt. Patrick Henry, of Arkansas, who had in charge the arrangements for the hearing before the committee, introduced Hon. W. W. Heard, governor of Louisiana, chairman of the delegation representing the Interstate Mississippi River Improvement and Levee Association, who called upon Mr. Murray Smith, of Mississippi, to read the resolutions passed by the association, which are as follows:

"First. After years of actual observation and experience, and supported by the opinions of all engineers, whether from the Engineer Corps of the Army or from civil life, who have been directly connected with the work of levee construction, we desire to affirm that we have the most absolute confidence in the sufficiency of levees, when built according to correct standards, to protect the Mississippi Valley from overflow.

"In support of this declaration we beg leave to submit the following facts, which have been fully established: An elaborate and careful investigation, made under the direction of the Mississippi River Commission, wholly disproves the notion, which still prevails to a considerable extent, that the immediate effect of levee construction is to

cause the bed of the Mississippi River to rise. If this were true, it would necessarily follow that the levees would need to be continuously strengthened and elevated, and thus all hope of protection would have to be abandoned.

"In the years 1881, 1882, and 1883 an elaborate survey was made of the river bed from Cairo to the Passes, a distance of 1,063 miles. Four cross sections to the mile were made and 75 soundings were made to each line. The result of this survey was carefully plotted, recorded, and preserved.

"In the years 1894, 1895, and 1896, after the lapse of a period of thirteen years, a still more elaborate survey was made of that part of the river bed between the Arkansas River and Donaldsonville, La., a distance of 472 miles.

"While local changes in the river bed are necessarily constantly happening by reason of the gradual movement downsteam of the bends and accompanying bars and pools, they of themselves signify nothing. Yet a comparison such as that which has been drawn from the result of the two extensive surveys mentioned would necessarily furnish proof that the bed of the river was rising if such were the truth. So far from the comparison indicating such result from levee construction, it was discovered that there is a general tendency to the establishment of a more uniform channel in depth and width and with greater capacity.

"The comparison also brought to light the fact that the crests of the low-water bars, as well as those of the high-water bars, have been lowered.

"If we turn to the evidence afforded by the records of the numerous gauges established along the river, which have also been carefully recorded and preserved, we find that the low waters now are several feet lower than they were in the years preceding active levee construction, accompanied by an equal volume of water and an equal depth of channel. This unquestionably shows that the effect of levee construction has been to bring about a gradual depression of the river bed. This effect has been produced within the past few years, for prior to that time there was no such restraint of the flood waters as could leave any impress whatever, one way or the other, upon the river bed.

"The notion that the bed of the river is rising has been somewhat revived since the flood of 1903, because of the fact that at certain points the gauge reading showed not only unusually great elevation of the flood height, but irregular elevation. From this it has been deduced by some that at those places where the gauge readings were the highest there had been, as the result of levee construction, an unusal deposit of silt, thus raising the bed of the river. A simple explanation will destroy this theory:

"In 1880, when the levees were by no means continuous and were altogether insufficient to affect the flood plane in any degree, the first thoughtful and scientific observation of the river began. This was because of the fact that the Mississippi River Commission then entered upon the discharge of its duties. It was noted that the rise and fall of the river was very different at different points. It was observed that the greater annual oscillations, which were of about 45 feet, were to be found at or near the mouths of the tributaries, such as the Ohio, the St. Francis, the Arkansas, and the Red rivers. It was also

observed that the lesser annual oscillations, which were of about 35 feet, were to be found at intermediate points along the fronts of the great basins drained by these tributaries, as, for example, at Fulton, Memphis, Greenville, Lake Providence, and St. Joseph.

"A careful plotting of the gauge readings at that time exhibited a smooth and regular high-water slope, but an exceedingly irregular low-water slope. This was caused by considerable depression of the river bed at or near the junction with the tributaries of the river and a considerable elevation of the bed along the fronts of the great basins between them. For this reason it was noted that the rise in high water was much greater where the bed of the river was depressed at or near the points of junction with its tributaries.

"It was observed that the discharge at high water at these points, because of these depressions, was something like 1,500,000 cubic feet per second, while along the intervening basin fronts the discharge was several hundred thousand feet less. This difference in discharge, ranging from a quarter to a half million feet, was because of the escape of water over the river banks along these basin fronts. This escape of water undoubtedly caused the elevation of the bed along these fronts which was noted, and we feel justified in affirming that when this escape shall have been permanently prevented by the construction of suitable levees, these elevated portions of the river bed will be gradually lowered to conform to the bed at the points of junction with tributaries, thus making a regular low-water slope. When this shall have been accomplished, undoubtedly the lowering of the river bed will steadily go on.

"It has also been noted that during the flood of 1903 the heights attained by the flood in excess of those hitherto recorded were greatest at the points along these basin fronts, as, for instance, at Memphis, where the rise was 3 feet greater than any ever known.

"The excess of flood height at the points of depression referred to was nothing like so extreme.

"We therefore declare that, in our judgment, there is no warrant whatever for the assertion that the effect of levee construction has been or will be to raise the bed of the river, but, on the contrary, it is our definite conviction that the effect will be to cause a general and considerable lowering of the bed.

"EFFICIENCY OF LEVEES.

"Second. We also desire to express our firm opposition to all schemes for reducing flood heights of the lower river by the construction of reservoirs or so-called outlets. We refer to and indorse fully all that is said upon this subject by the very careful and able report submitted in 1898 by the Commerce Committee of the United States Senate, which is so complete and elaborate as to exhaust the consideration of the question. We will add that all schemes which have ever been proposed for the relief of the river in times of flood by outlets or reservoirs would either prove wholly inefficient or would cost such vast sums and require such constant care and expenditures as to entitle them to no consideration.

"Third. While the flood of 1903 was very nearly as great as that of 1897, and while the flood plane was greatly in excess of that of 1897, the protection afforded in 1903 over that of 1897 is so great as to

satisfy the minds of all impartial investigators that so far as the test has gone the principle of protection by levee construction has been amply vindicated. In 1903 there were but 6 crevasses, as against 43 in 1897. With each recurring flood since levee construction began in earnest the number of crevasses has grown smaller and smaller and the protection afforded has grown greater and greater. As a result, investments of capital in the Mississippi Valley have increased until they are almost fabulous. The low-lying back lands which prior to that date were regarded as valueless are fast being occupied and converted into homes for the benefit of our people. Towns and cities have sprung up in every direction. Railroads now traverse the valley, so that nearly every part of it is now reached by them. All of this affords evidence of the strongest possible conviction on the part of the people that the time is sure to come when they will have absolute protection from the floods of the river.

"Theorists may argue against the efficiency of levees, but they do so in vain. The strong common sense of the people responds by rejecting their theories. The work must go on. It can not now stop. Too much money has been invested in levees to suffer them to be destroyed, and unless they are prosecuted to completion they will be destroyed. The enormous investments made because of them and in reliance upon their completion can not in good faith be abandoned now to the devastation of the floods. We presume that no man can be found at this stage of the work to suggest that the plan of protection by levees should be abandoned, at least until a full and complete test has shown them to be impracticable.

"MISSISSIPPI RIVER COMMISSION.

"Fourth. The following abstract of the report of the Mississippi River Commission, just made, and hardly yet published, gives the very latest opinion of the Commission upon the levee question, and is so comprehensive and pertinent that we give it at length, to wit:

"'The past flood established, more clearly than has any previous one, both the importance and the practicability of a complete and sufficient levee system. In its present condition, incomplete both as regards extension and dimensions, it gave substantial protection to three-fourths of the alluvial valley and its interests, which under equal flood conditions without levees would have been a lake from 20 to 80 miles wide from Cairo to the Gulf. The improvement made during the past six years has reduced the number of crevasses between Cairo and New Orleans from 38 to 6. Of the area overflowed this year, five-eighths was the direct result of backwater from the lower ends of the basins and overflow through unbuilt parts of projected lines, and only three-eighths from breaks in the levees, notwithstanding their unfinished condition as regards both grade and section.

"'Under these circumstances the importance of the earliest practicable completion of the work is apparent. If the flood damages of 1903 may be approximately estimated at $5,000,000, the previous expenditure of that sum in permanent work would have largely if not entirely prevented them. Every year's delay in completion incurs the risk of similar loss. When the system shall have been completed the cost will have been increased by many millions of dollars, and the development of the valley delayed by many years of anxiety and disaster,

which could have been saved by continuous work on a scale commensurate with the importance and magnitude of the improvement. The State levee districts realize this. Most of them have anticipated their revenues as far as practicable, and several have now under consideration plans for such increase of resources applicable to the work as will shorten the time of completion. The Commission is so impressed with this view of the subject that it considers it for the best interest of the work to now make contracts for levee construction to the extent of $2,000,000, as provided for in the river and harbor act of June 13, 1902, from the amounts to be appropriated for the fiscal years ending June 30, 1905, and June 30, 1906. Furthermore, it suggests that if Congress should think proper to make additional provisions for levee construction during the fiscal years ending June 30, 1905, and June 30, 1906, the sum of $2,000,000 in addition to the amounts already provided can be judiciously and advantageously expended during each year.'

"CONSERVATION OF COMMERCE.

"Fifth. In addition to the protection of the lands of the Mississippi Valley from the floods, it is a matter of supreme importance that the mind of the nation should be kept constantly advised of the commercial importance of the Mississippi River as a highway of commerce. The marvelous growth of railroad building within the last quarter of a century has so diverted the attention of the public from the Mississippi River as a means of transportation that it has been to some extent lost sight of. It has remained, however, a constant safeguard against undue rates of transportation, and promises in the near future to become once more as active a factor in interstate commerce as it ever has been in the past. This is owing, first, to the almost unparalleled increase in industrial activity throughout the valley, and, second, to the demonstration which has been made in recent years that by means of hydraulic dredges a sufficient channel for low-water navigation can be secured and maintained. We earnestly express the hope that the work of the Mississippi River Commission in this direction be pressed as rapidly as can be properly done with a view to opening up the great river once more, so that the people may fully enjoy the extraordinary facilities which it is capable of supplying for the cheap and steady exchange of their commodities. Levee construction is undoubtedly essential, even if all thought of reclaiming the fertile lands of the valley should be abandoned, for without levees all river commerce during periods of overflow would necessarily cease.

"A GRIEVOUS BURDEN.

"Sixth. The work of levee construction has been carried on by the cooperation of the United States Gover ment through the agency of the Mississippi River Commission with the levee organizations of the several riparian States. Of the amount expended in this work the Government has contributed, in round figures, about one-third. The people have subjected themselves to such heavy taxation in furnishing their contributions until they have already overburdened their resources in this regard. It is the opinion of the residents of the great valley that the difficulties and magnitude of the work and the vast benefits to result from it are such that in common justice the burden

should be placed upon the strong shoulders of the Federal Government, and that the work should be urged to speedy completion. By suitable annual appropriations this can soon be accomplished, thus securing not only safety, but great economy: Therefore,

"DUTY OF THE GOVERNMENT.

"*Resolved*, That, in the judgment of this convention, the protection of the Mississippi Valley from floods is of such national importance as not only to justify, but to make it the duty of the General Government to undertake it and press it to the speediest possible completion. If, for any reason, the exercise of sole jurisdiction at this time by the General Government should not be deemed advisable, then this convention urges most earnestly that Congress make at its approaching session such appropriations as are recommended by the Mississippi River Commission in its recent report.

"THE COMPREHENSIVE PLAN.

"*Resolved further*, That the system of river improvements in the valley of the Mississippi from its headwaters to the Gulf, and in the valley of the Ohio and other tributaries, now provided for, and those which may hereafter be provided for by Congress under the supervision of the United States engineers, meets our hearty commendation, and should be prosecuted to completion without unnecessary delay.

"*Resolved*, That the attention of Congress is invited to the serious disasters which have befallen those residing at or near St. Louis, Kansas City, and other localities by reason of the recent great floods, and the Secretary of War is respectfully requested to cause an inquiry to be made with a view to the preparation of suitable plans for the prevention of a recurrence of such injuries.

"*Be it resolved*, That the convention of delegates representing the States of the great Mississippi Valley from Duluth to the Gulf of Mexico gives its unqualified approval to the movement for the construction of a waterway connecting the Great Lakes at the north with the Mississippi River and the Gulf of Mexico at the south.

"We recognize the expenditure of $35,000,000 by the sanitary district of Chicago as a practical demonstration in the furtherance of this project. We express the hope that the Senators and Representatives in Congress from the various States represented in this convention will give their encouragement and assistance to Congressional legislation in favor of the completion of the deep waterway, to which the Mississippi Valley States have already given their approval, and to which the State of Illinois and the sanitary district of Chicago are committed as a matter of policy and by great financial expenditures already made."

STATEMENT OF HON. W. W. HEARD, GOVERNOR OF LOUISIANA.

Governor HEARD. Gentlemen of the committee, it is pardonable that I should express the great honor I feel in having been selected to appear before you as chairman of this splendid delegation of citizens who have come here with me to represent the interests of 35,000,000 of their fellow-citizens, and 1,240,000 square miles of territory, or 41 per cent of the total area of these United States.

It is our purpose in coming before you to-day to present to you as briefly and concisely as may be an array of facts and figures as will show the vast extent of territory, and the magnitude of the agricultural, commercial, financial, and other interests dependent for present prosperity and for future development upon immunity from floods and upon the improvement of navigation of the Mississippi River. We feel confident that if these facts and conditions can be presented as they actually exist, the national importance of the subject, and of our mission and the responsibility, yea, the duty, of the General Government to more generously aid in the great work to be done will seem so obvious as to need hardly more than passing reference.

Almost fifty years ago the improvement of the Mississippi River on the score of benefiting navigation and reclaiming land was recognized. In 1845 there was a levee convention—or river convention, perhaps, would be the better term—held in the city of Vicksburg, and the resolutions there adopted would seem to apply with more force now than then. I shall read them, Mr. Chairman:

"NATIONAL IMPROVEMENT OF THE MISSISSIPPI.

"*Resolved*, That safe communication between the Gulf of Mexico and the interior, afforded by the navigation of the Mississippi and Ohio rivers and their principal tributaries, is indispensable to the defense of the country in time of war, and essential also to its commerce.

"*Resolved*, That the improvement and preservation of the navigation of those great rivers are objects as strictly national as any other preparation for the defense of the country, and that such improvements are deemed by this convention impracticable by the States or individual enterprise, and call for the appropriation of money for the same by the General Government.

"*Resolved*, That the deepening of the mouth of the Mississippi so as to pass ships of the largest class, cost what it may, is a work worthy of the nation and would greatly promote the general prosperity.

"*Resolved*, That the project of connecting the Mississippi River with the Lakes of the North by a ship canal, and thus with the Atlantic Ocean, is a measure worthy of the enlightened consideration of Congress.

"*Resolved*, That millions of acres of the public domain lying on the Mississippi River and its tributaries, now worthless for purposes of cultivation, might be reclaimed by throwing up embankments, so as to prevent overflow, and at this convention recommend such measures as may be deemed expedient to accomplish that object by a grant of said lands or an appropriation of money."

Senator ALGER. What is the date of that, Governor?

Governor HEARD. 1845. At that convention Mr. J. C. Calhoun was the presiding officer, and, among other things, he said:

"In relation to the great highway of western commerce—at least the great inland sea of the country, the Mississippi—he did not for a moment question that the Government was as much obligated to protect, defend, and improve it in every particular as it was to conduct these operations on the Atlantic seaboard. It was the genius of our Government, and, what was to him its beautiful feature, that what individual enterprise could effect alone was to be left to individual enterprise; what a State and individuals could achieve together was left to the joint

action of States and individuals; but what neither of these separately or conjointly were able to accomplish, that, and that only, was the province of the Federal Government. He thought this was the case in reference to the Mississippi River."

The CHAIRMAN. Will it disturb you, Governor, if I ask you one or two questions?

Governor HEARD. No, sir.

The CHAIRMAN. In the resolutions of the convention the statement was made that the United States, up to the present time, had paid one-third of the cost of the levees. Is that correct?

Governor HEARD. I shall come to that at once. I have some data here, Mr. Chairman, prepared by our State board of engineers, and I think probably that will answer your question. If not, I will be pleased to answer it as far as I can. The items that I shall refer to are elaborated in detail by Colonel Perrilliat.

Data regarding the levee districts of the Mississippi River.

Total alluvial area subject to overflow	square miles	29,790
	acres	19,065,600
Total area incorporated in levee districts under various State laws	square miles	26,952
	acres	17,249,642
Percentage of area in cultivation to total		19.7
Total number of levee districts in Mississippi Valley		25
Total number of commissioners governing same		155
Total length of levee line in Mississippi Valley on Mississippi River and its tributaries	miles	1,956
Extension of levee line required	do	191
Total assessed valuation of levee district, exclusive of Orleans		$112,887,591
Assessment of Orleans		$150,055,240
Total revenue for levee building contributed in 1902, by States and levee districts		$2,239,754
Total contributed by United States Mississippi River Commission for levee purposes for 1902		$1,000,000

I believe that answers your question.

Senator BERRY. That is for the year 1902 only?

Governor HEARD. Yes, sir.

Senator BERRY. If you will permit me, Mr. Burton, the chairman of the committee of the House, stated in his last speech on the river and harbor bill that the Government had paid 38 per cent and the local authorities 62 per cent.

Governor HEARD. I think the Government has spent about $17,000,000 in all, and the States about $28,000,000, since 1882.

The CHAIRMAN. Is that done by State law, a regular assessment of taxes, and all that sort of thing?

Governor HEARD. Yes, sir; I shall try to cover that, Senator.

Total amount of bonds authorized to be issued by levee districts for levee building on the Mississippi River and its tributaries		$8,788,000
Total amount of these bonds already issued		$7,337,700
Total amount of earthwork estimated necessary to complete levee line to Mississippi River Commission grade	cubic yards	89,086,047
Estimated cost of above earthwork		$17,817,198
Percentage of present condition of levee line to estimated completion		65.9

FEBRUARY 1, 1904.

(Compiled by Arsene Perrilliat, member board of State engineers of Louisiana.)

The Interstate Mississippi River Improvement and Levee Association, which met recently in convention at the city of New Orleans, and

which we have the honor to represent here to-day, was the largest and most imposing gathering of the kind that it has ever been my pleasure to attend. The proceedings show that 2,800 delegates were appointed to that convention. One hundred and sixty-six cities and 24 States were represented, and besides Senators, Congressmen, and governors there were delegates from commercial bodies, organizations, and municipalities covering the great Mississippi Valley Basin from its eastern confines to its western borders.

Twenty governors, 22 United States Senators, and about 100 Congressmen expressed their cooperation and sympathy in the movement or in the purposes of the convention. One of the distinguished members of this committee was there and addressed the convention, telling us what had been done by the National Government; and I may say in this connection that his reference to the honorable chairman of this committee and his efforts was received with great applause and enthusiasm.

The CHAIRMAN. You are trying to corrupt the chairman, now, Governor. [Laughter.]

Governor HEARD. The Senator from Arkansas, Mr. Berry, can bear me witness as to the truthfulness of that statement.

Senator BERRY. It was the only enthusiastic applause I got.

Governor HEARD. A personal letter from the President of the United States was read before the convention, in which he said:

"Exactly as I have taken a keen interest in irrigation in the arid regions, so do I feel that the movement for thoroughly protecting the Mississippi lowlands by levees is one of importance to the whole country, no less than to the people immediately adjoining the great river. I wish all success to your convention."

The distinguished Secretary of Agriculture—Hon. James Wilson—in an address before the convention, expressed himself as being in entire sympathy with its objects.

As I have shown in my remarks before that convention, the delta of the Mississippi River subject to overflow, extends from Cape Girardeau, 45 miles above Cairo, to the Gulf of Mexico, nearly 600 miles in an air line, and varying in width from 20 to 30 miles. The Mississippi River, which flows through this delta, carries the drainage from 1,240,050 square miles of land, or, as I have before stated, 41 per cent of the total area of the United States. The area drained extends from Canada to the Gulf of Mexico and from the Rocky Mountains to the Alleghenies. It drains 10 entire States, parts of 22 other States and Territories, besides a part of 2 provinces in Canada, a country equal in area to that of Austria, Germany, France, Holland, Italy, Spain, Portugal, and Great Britain combined.

Can this, then, be considered a matter of merely local importance?

The national character of the work has no better illustration than the peculiar situation below the Arkansas River, where a large portion of the State of Louisiana is only protected by a line of levee in the State of Arkansas, which runs through local districts too poor to care for it, and which is only maintained by the joint efforts of the National Government and the State of Louisiana.

The flood water of half this Republic rushes down upon us at regular seasons each year, and for the protection of lives and property, the energies and resources of individuals and of the States are taxed to the utmost.

The question naturally arises, What have the people of these States done for themselves? What have they done for their own protection? Let us see, and I take for example my own State of Louisiana. There an ad valorem tax of 1 mill on the dollar of the total assessment of the State is levied and set apart for the construction of levees.

The CHAIRMAN. Is that annually?

Governor HEARD. Yes, sir; property of all kinds, real and personal.

The CHAIRMAN. Over the whole State?

Governor HEARD. Yes, sir; even in the hill portion of the State, and that comprises about one-half, I may say, of the State, that has no direct benefit from levees, and only an indirect benefit. One mill of our 6-mill State tax on all assessable property is set apart for levee construction.

Senator CLAY. Governor, do you not levy a special tax on the land involved?

Governor HEARD. I will answer you directly, Senator. In addition to this tax, which is paid by all citizens whether they receive benefits from the levee or not, a special levee tax of 10 mills is levied on all property subject to overflow which may be situated in the various levee districts of the State.

Senator DEPEW. How much?

Governor HEARD. Ten mills.

Senator FOSTER, of Washington. Is that based on a low valuation?

Governor HEARD. No, sir. Well, the valuation is not the actual value of the property, but it is the same in proportion to the other property.

Senator MALLORY. It is the same basis as other properties levied on?

Governor HEARD. Yes, sir.

The alluvial portions of the State are subdivided into levee districts, of which there are some fourteen in Louisiana, presided over by as many boards of commissioners. By reason of the protection afforded by the building of levees, these districts are thickly populated and in the highest state of cultivation. But the people thereof are compelled to pay dearly for this protection from floods. Besides the 10-mill levee tax they pay a forced contribution of $1 on every bale of cotton produced and a proportionate amount on every hogshead of sugar, barrel of sugar, sack of rice, bushel of potatoes, etc., and even the oysters, which live and have their being in the waters of the Gulf of Mexico, on the shores of Louisiana, strange as it may seem to you, are taxed for protection against the floods of the Mississippi River.

In addition to this, these levee boards have issued large amounts of bonds, predicated on their revenues. The tax on the people living in these alluvial districts is very heavy, amounting in most cases to 1½ per cent and in some isolated cases, in Louisiana, the special tax amounts to as much as 3½ per cent. Six million six hundred and fifty-five thousand two hundred dollars of bonds have been issued and the proceeds applied to levee work in the Mississippi Valley, and $1,960,000 is derived from taxation annually.

Senator ALGER. This is for Louisiana?

Governor HEARD. This is for Louisiana. The other statement was for the Mississippi Valley. Of this, it is safe to say that $1,500,000 is actually expended in earthwork, the balance being devoted to the payment of interest on bonds issued and the cost of administration and operation. For every dollar expended by the Government the districts and State expend or contribute $2.25.

To be accurate, it is $2.24, I believe. For every dollar contributed by the Government of the United States, Louisiana as a State, with her board, contributes $2.25.

Where or how these annual floods occur and why and how they occur are matters in which there is a diversity of opinion among the scientists and experts. That they do occur with marvelous regularity is sufficient for us to know. Then follows naturally the question of the best method or means of protection. In this connection permit me to quote the admirable report of the Committee on Commerce to the Fifty-fifth Congress. "The scheme (of reservoirs) is regarded by nearly all engineers as wholly impractical," and "your committee can discover no just or adequate relief in reservoirs." "Neither can your committee discover any material relief in the outlet system."

Commenting on the reports of Captain Humphrey and Lieutenant Abbott, made to the Government as far back as the year 1861, it says:

"It is made clear that no substantial relief from the floods could be obtained from reservoirs or outlets, and that levees properly constructed would afford the necessary relief."

The report of this committee goes on to say further:

"From all the evidence taken and considered by your committee it is evident that the basins and bottoms along the Mississippi River exposed to the floods of the river can only be protected and preserved from such floods by an ample and complete system of levees from Cairo to the Head of the Passes. Crevasses and inundations, resulting in extensive loss of life and property, are liable to occur during all floods so long as the system is incomplete. The burden of completing the levee system is too great for local and State authority."

Just as was recited in the resolutions adopted in 1845.

"Your committee are of the opinion that the Federal Government should continue as it has since 1882 to aid in the great task of controlling and repressing the floods in the river." This opinion is supported by all the highest authorities—men who have made a lifetime study of the subject; but the best vindication of the levee system is the record of what has been accomplished by the levees themselves, imperfect and inadequate as they may be. In the year 1882, when the levees were scarcely more than furrows along the banks of the river and were built by private persons for the protection of their own individual property, no safety was afforded worth mentioning. In the year 1897, when the necessity for State control was imperative, the system was improved and levees were built for the protection of entire districts the benefits grew in proportion to the work accomplished. In the year 1903, when more and higher levees were constructed, the results were so apparent as to put at rest all doubts as to the merits of the system, as will be seen from the following tables:

"In 1882 there were 282 crevasses.

"In 1897 there were 38 crevasses.

"In 1903 there were 7 crevasses.

"In 1882 the floods swept away 54 miles of levees.

"In 1897 the floods swept away 8.7 miles of levees.

"In 1903 the floods swept away 2.5 miles of levees."

Could there be any greater vindication of the levee system than is shown by these tables of what they have accomplished?

Thus I have endeavored to show (1) the immense area and the diversity of interests involved in this subject of levee protection; (2) the

importance to the Nation of securing these immense bodies of lands from annual inundation; (3) the efficacy of the levee system and the necessity for the perfection and completion of that system.

And now we come to the point of asking the aid of your honorable committee——

Senator DEPEW. Before entering upon that, what is your method of policing?

Governor HEARD. We have inspectors employed by the various levee boards during high water, and the whole levee's line is policed. There are not so many of these employed during a low stage of the water, but it is policed from the Arkansas line as far as the levees go, each levee board looking after its particular line of levee. Of course that is true on both sides of the river.

And now we come to the point of asking the aid of your honorable committee in placing our claims for assistance to the National Government before Congress in such a light that will assure us of favorable consideration. Give us liberal assistance in this great work and when it is completed, and the immense tracts of land are protected from the constant fear of devastation, they will in return furnish to this country all the cotton, sugar, corn, and other staples that she will ever need.

I thank you for your patient hearing, gentlemen.

Senator ALGER. Before you sit down, Governor, can you tell us how many States are taxed for this purpose?

Governor HEARD. There are six, as I understand.

Senator MALLORY. Did I understand you correctly to say that the State of Louisiana contributes to the leveeing of the river in Arkansas?

Governor HEARD. Yes, sir; we spent in 1902 in Arkansas some $70,000. I do not remember the exact amount.

Captain HENRY. It was about that. It was about $68,000.

Governor HEARD. About $68,000 in the State of Arkansas in 1902.

Senator CLARKE. I think I should state the circumstance under which that was spent. There are not enough people in that territory to justify the imposition of a tax sufficient to do the work.

Governor HEARD. I had stated that, Senator.

Senator CLARKE. It is not necessary for Louisiana to pay anything where Arkansas's liability is clear.

Governor HEARD. I was stating, Mr. Chairman and gentlemen, what was the fact, and I stated also it was because the people in that district were not able to raise a sufficient amount of money to do the work.

Senator CLARKE. Do not put it that way. The people of Arkansas are able to pay everything they should pay; but there the lines ran so near the line of the Mississippi River that the territory necessary did not have enough value in it to justify the imposition of a tax that would build the levee.

Governor HEARD. My only object in referring to the subject was to show that it is a national question.

Senator BERRY. I want to add, Governor, that the injuries from the breaks there in the levee resulted largely to Louisiana and very little to Arkansas.

Governor HEARD. Of course I wanted to show that we had to do that in order to protect ourselves.

Captain HENRY. Mr. Chairman, the next speaker is Judge Cochran, of St. Louis, the general counsel of the Gould system of railroads.

STATEMENT OF HON. ALEX. G. COCHRAN, OF ST. LOUIS, MO.

Mr. COCHRAN. Mr. Chairman and gentlemen of the committee, I desire to express to you, as I did to the House committee yesterday, the regret which Mr. Gould, president of the Missouri Pacific system, feels in not being able to be personally present this morning to express his own views in regard to the important question which is under consideration before the committee. He had hoped to have been here, but engagements of a very imperative character prevented his coming, and so at the last moment he requested me to appear in his place.

Mr. Gould was invited to attend the great levee convention which was held in New Orleans in October, and in his reply, regretting his inability to be there, he expressed in a very terse way the extent of the railroad construction contemplated through that country, so far as our system is concerned, and perhaps I can not do better than to read you the letter which Mr. Gould wrote on that occasion, which is as follows:

195 BROADWAY, NEW YORK.
October 23, 1903.

J. N. LUCE,
Chairman New Orleans Levee Executive Committee,
New Orleans, La.:

I regard your convention to be held in New Orleans on the 27th as a very important event for the entire Mississippi Valley and all the great and diversified interests therein, and I hope the views and plans for levee protection that will be formulated will be so desirable to all interests, including those of your great city, that they will commend themselves to the public at large and to the Congress of the United States, where it is hoped liberal appropriations will be provided. The railroad interests I am connected with have under way and partially completed a low-grade line of road from East St. Louis to New Orleans, crossing the Mississippi River on a great bridge at Thebes, Ill. When this line is completed it will be a water-grade line paralleling the Mississippi and opening up virgin forests upon its west bank, and in addition it will make accessible great areas of farming lands susceptible of a high degree of cultivation if safe from inundation. We are also, at great expense, rebuilding the railroad between Little Rock, Ark., and Coffeyville, Mo., and are constructing a new low-grade line of railroad in the White River Valley to connect our Kansas City lines with the main line of the Iron Mountain road. All of this, with necessary expenditures for equipment and other railroad appurtenances, will amount to from $40,000,000 to $50,000,000, and the work has been under way for two or three years, with the belief on our part that this great investment, the bulk of which will be in the Mississippi Valley, will be protected from damage by floods and inundation. The completion of our plans hereinabove outlined will inure greatly to the benefit of the city of New Orleans and largely add to her maritime trade.

GEORGE J. GOULD.

Senator NELSON. Is this railroad on the west side of the river?

Mr. COCHRAN. It extends from East St. Louis down on that side of the river to a point near Thebes.

Senator NELSON. And then goes down on the other side?

Mr. COCHRAN. And then goes down on the other side; yes, sir. It connects with the great bridge now in course of construction there and which will be used by five different systems of roads when completed.

Of course it goes without saying that it is largely to the interest of the people of this great valley that the Mississippi Delta, subject to overflow, shall have the benefit of railroads. It also goes without saying that these great improvements, which cost so many millions of dollars, will not be constructed, unless the projectors of them have some reasonable guarantee that their property will, when constructed, not be swept away or seriously impaired by floods or the operation of the property prevented.

The condition of the country protected by levees is unquestionably very much better to-day than it has been in times past. I had the honor, as the chairman knows, for many years prior to his death to represent as private counsel that distinguished engineer, James B. Eads, who constructed the jetties at the mouth of the Mississippi River, the bridge at St. Louis, and the light-draft gunboats that participated in the lower river battles during the war, and accomplished such important results. You will pardon me if I say in passing that I believe he would have been successful, if he had lived, in solving the isthmian problem by the construction of his great ship railway across the Isthmus of Tehuantepec. It has always been to me, as an American, a source of great regret that this peerless engineer, this splendid genius—one who never failed to accomplish any work he undertook—should have been called from earth so soon and before he had finished the grandest and last of his great works.

Not long ago, when I was in Mexico, I had an opportunity for a brief conversation with the President of the Republic, General Diaz, and through the interpreter he expressed to me his regret that the great plans which they had all hoped to see accomplished there in the construction of this railroad, which was something above ground, that you could see and repair, and connected with which there were no serious problems to be solved, should have ended with the death of its great projector.

The CHAIRMAN. You refer to the Tehuantepec ship railroad?

Mr. COCHRAN. Yes, sir; which was to extend from the river on the Gulf side to the great lagoon on the Pacific side, only about 132 miles across, I think, in a comparatively straight line, with no gradients greater than 1 per cent, and under conditions and plans which had met with the approval of the greatest engineers of the world.

The CHAIRMAN. Our Democratic friends have given us all the talk we want on that subject. [Laughter.]

Mr. COCHRAN. Well, I am through. I digressed a little simply because I think these two great enterprises—the ship canal which is to be constructed now at Panama, which I cordially indorse, and the improvement of the Mississippi Valley by the necessary protection and reclamation of its overflowed lands, thus changing a wilderness into a vast area of producing territory—are very closely connected and may well be considered together.

I was very deeply interested yesterday in the House committee in listening to ex-Secretary Fairchild, who spoke of the great importance to this country of the reclamation of these lands for the purposes of cotton growing. I trust the gentlemen of the Senate committee may

have an opportunity, when the proceedings before the Committee on Rivers and Harbors are published, of reading the remarks of Mr. Fairchild on that subject. The general line of his thought was that while other nations may produce wheat and other cereals, after all this country is adapted to the raising of cotton; that the cotton crop is the great crop; that if the cotton crop of the country fails it affects the whole financial relations of the country and of the world to an extent requiring serious thought and substantial readjustment of the money situation. Here in this Mississippi Delta is a vast acreage of the richest cotton-growing land in the world, not more than a third—perhaps not so much as a third—of which is reclaimed and made capable of cultivation.

In the speeches which were made before the levee convention, which assembled at New Orleans (and they were all very fine addresses, made by gentlemen who had most carefully studied all the statistics bearing upon the subject), this matter is fully discussed, and it is shown how this vast acreage of about 30,000 square miles, included within the overflowed delta of the river in Arkansas, Mississippi, and Louisiana, can by levee protection be brought into cultivation, and can be made, so far as the raising of cotton is concerned, the garden spot of the world. This would give to the United States, as Mr. Fairchild said yesterday, an advantage in that respect which would not be enjoyed by any other nation on the earth. This would be a permanent advantange, the value of which would be incalculable.

Gentlemen, there was a time when in the discussion of a question of this character it would have been necessary to have gone into a good deal of detail. A great many questions which may be regarded as now settled would then have had to be discussed. For example, there was a long period, as you know, when no appropriations were made for levee improvements except in connection with, and as necessary to, the improvement of the navigation of the river. In his remarks before the levee convention my friend, Judge Blanchard, calls attention to the years between 1882, when the river and harbor bill was passed making appropriations for the Mississippi River, and 1892, when the first bill was passed (reported by him as chairman of the committee of the House) carrying an appropriation authorizing an expenditure for levees as such, and without the previous onerous conditions. In 1892 this departure was made with the understanding that such portion of the appropriation as the Mississippi River Commission saw fit to expend in the improvement of the levees should be thus expended, and from that time on until the present time these expenditures have been made under the supervision of the Board of Engineers of the Army and the Mississippi River Commission, and upon well-approved plans which have been carefully considered by these gentlemen.

We have so far committed ourselves in favor of the expenditure of money for levee protection, especially by the act of two years ago appropriating $2,000,000 a year for four consecutive years for the general improvement of the Mississippi River and for levee protection, that we may accept it as a settled conclusion of Congress that further money which may be needed will be appropriated for that purpose.

In this connnection the fact may be noted that by the report of the Mississippi River Commission it is made manifest that all of this money which is expended in levees is in a sense an improvement of the Mis-

sissippi River. There was a time when it might have been necessary to show how, by contracting the width of the channel on the principle of the jetties at the mouth of the river, you would be enabled to force the river to do its own scouring, thus lowering the flood line. That is not necessary now, however, in view of the reports of the Mississippi River Commission, made after careful investigation, in which it is declared that the construction of these levees and the consequent retention of the river within its banks, results in some channel deepening, and, therefore, improvement of the river. This consideration affords an added reason why liberal appropriations should be made.

But I must not take up too much time, as others are to follow me. Our system wants to build more railroads down there. It wants to develop that whole country. Of course, there is always involved in railroad construction the desire for reasonable returns on the investment, and yet in the present case I may say that, so far as the interests I represent are concerned, they are not actuated solely by a desire to profit. There is a very earnest and sincere desire to benefit that section of the country. I think no one can visit our southern country, including Arkansas, Louisiana, and all down through the delta of the Mississippi, coming in contact with the class of men you meet, without feeling a cordial sympathy with them and a desire to help them in their struggle with inrushing floods of water, which mean ruin and destruction to life and property. These men are willing to help themselves by contributions of money and by hard work; they are willing to toil by lantern light in the nighttime, and at the risk of their lives go out upon the top of those levees to battle with the rising water. They can not spend all the money, can not do all the work. If they are to succeed they must have liberal help from the Government. Of course, it can not be expected that railroads will furnish the vast sums of money which necessarily will be expended in the development of that country unless there is a reasonable guaranty that inundations will cease, and that there will, through the construction of levees, be some sufficient protection to property.

I realize the many demands made on Congress for money. From all over the country come clamorous voices demanding appropriations. The representatives from Arkansas, Louisiana, and from all these States are not here denying to anyone else an equal right with themselves to get such help as Congress may see fit to give them. They are not here to-day and they never have been before Congress antagonizing the scheme of any other State or any other people. They are willing to cooperate with others, but they do say this, and they say it truthfully, that this levee question is the great question, and there is no question affecting the Mississippi Valley as great as the protection of those alluvial lands from overflow and destruction. It must be remembered that the waters of 10 States drain wholly into the Mississippi, and those of 22 other States and Territories partially drain into that river, and, as I said to the House committee yesterday, these people of the valley are not responsible for these floods of water that come rushing down upon them. The river is the nation's sewer. It is the great drainer of that vast area of territory. Is it not fair that Congress should provide all needed money for protection against the floods?

Now, Mr. Chairman, I must bring my remarks to a close. You will pardon me for having occupied so much time. My excuse for it

is the deep interest which I and those with whom I am associated have in this great matter.

Captain HENRY. The next speaker, Mr. Chairman and gentlemen, is General Vance, of Ohio.

STATEMENT OF JOHN L. VANCE, OF OHIO.

Mr. VANCE. Mr. Chairman and gentlemen of the committee, I shall occupy your time not to exceed seven minutes.

My home is on the banks of the Ohio River, 1,700 miles above the city of New Orleans, and my purpose here to-day is to say to the committee that the people of the Ohio Valley want the Mississippi River improved more if possible than the Mississippi Valley people themselves, and that we are interested possibly to as great, if not greater, an extent, in the improvement of the Mississippi River than the people who live on its banks.

We have at the headwaters of the Ohio River the greatest manufacturing center of the world. It is unequaled. We have the coal mines of the Monongahela, the Big Kanawha, the Big Sandy, the Green, and the other tributaries of that river. In a word, we have an inland water system embracing 4,400 miles that is the greatest freight producer in the world. There is nothing that equals it. The manufacturing industries of Pittsburg are but a part of that great valley's manufacturing force. You come on down the river to Evansville, to Anderson. I can not give you the exact distance above the mouth of the river, but more than half way between Louisville and Cairo every town upon either side of the great Ohio River is filled with manufacturing industries and engaged in the manufacture of goods for transportation by water, as the cheapest mode of moving it to the markets of the world. We are absolutely dependent, therefore, upon the improvement of the Mississippi River, laying aside all questions of the alluvial soil that will be brought into use and become thickly populated, every word of which I indorse; but we of the Ohio Valley proper and of the great tributaries of the Ohio Valley must depend upon that river to reach, by means of transportation down the Mississippi River and reshipment from New Orleans, the great markets of the entire world.

Some two years ago one of the most distinguished men of this country, in an address at Pittsburg, advised the people of western Pennsylvania, for the time being, at least, to stop building railroads. He said to those people "Stop this railroad building so much. Put all your energies and all your power together in the improvement of your waterway. When that is done the great heavy freights of this entire valley will find their way down the Ohio River, down the Mississippi River to New Orleans, and then to the countries of the world by water, which is the cheapest mode of transportation known to man."

Now, gentlemen, but a step further. I think I have shown you why we are interested. I do not want my Mississippi River friends to take all the credit of being in favor of this great enterprise. We also of the Ohio, 2,000 miles from those at the lower end of the Mississippi, are anxious for it beyond all measure.

Still further for a moment. I attended the Mississippi Levee Convention at New Orleans by invitation of Governor George K. Nash,

of the State of Ohio, by appointment of the Cincinnati Chamber of Commerce, and as president af the Ohio Valley Improvement Association. The latter association, let me say to you here, to-day represents a constituency of upward of 13,000,000 people directly interested in the improvement of the Mississippi River, the waters of their State emptying into it, and they being largely interested in it. Why, we reach away up into New York and draw some of her waters down our way; over into Maryland and North Carolina, and we even take a little part of Mississippi, Senator, and bring it down into the Ohio and reship it to you down below at New Orleans.

That convention was a magnificent assemblage. The speeches were carefully prepared. Much thought was given to all of them. They are worthy of perusal, because each speaker sought to demonstrate the practicability of the improvement of the Mississippi River in such way as not alone to protect the lands behind the levees, but to afford a navigable stream of water during the entire year, and that is what must come to the great valley of the Ohio and Mississippi Valley from Cairo down to enable it to reach in some small degree the fruition of its great hopes.

Gentlemen, I must trespass one moment. I have heard something said here, and more yesterday, in regard to the Panama Canal. I understand that the estimates of the engineers show that when the—we will call it the Isthmian Canal—that when the Isthmian Canal is completed about 6,000,000 tons of freight per year will go through from one ocean to the other. You complete the improvements of the Ohio and the Mississippi rivers, and within two years from the completion of the Isthmian Canal, instead of 6,000,000, if that figure is correct, you will send 12,000,000 tons of freight from the Ohio and the Mississippi valleys to that region. We will send from away up on the Allegheny River, 2,000 miles down to Louisiana, the coal that will supply San Francisco, and stop that section of the country from getting its coal in large amounts, as I now understand it does, from Australia.

Gentlemen, I thank you very much. It is too big a subject to look at in seven minutes.

Senator DEPEW. Have the proceedings of that convention been printed so that they are available?

Mr. VANCE. They have, Senator.

Captain HENRY. I will have them distributed to the committee.

Senator NELSON. Mr. Chairman, what I would like to know is this: Do you simply ask for additional appropriations, or do you advocate additional appropriations and a new scheme, a new method, of carrying on the improvements?

Mr. VANCE. Senator, I will answer your question, because I am familiar with the wishes of the gentlemen from the Mississippi Valley. I come from a little farther up, in God's country, as I call it, you know, on the Ohio. They ask for additional appropriations down there—to be frank with you, Senator, I would rather let some of the Mississippi people talk to you.

The CHAIRMAN. The resolutions which were sent here by that convention asked, if I understood them correctly, in the first place, that the Government of the United States should assume all of the erection of these levees, relieving the States and districts from the taxation which they have been suffering under heretofore; but if they could not

get that, then they were willing to have an increased appropriation every year for the levees.

Senator BERRY. As requested by the Mississippi River Commission in its last report.

Captain HENRY. The next speaker, Mr. Chairman, is Mr. Leroy Percy, of Mississippi.

STATEMENT OF MR. LEROY PERCY, OF MISSISSIPPI.

Mr. PERCY. Mr. Chairman and gentlemen of the committee, we are sent here simply, as I understand it, to vouch in person for the character of the convention that passed these resolutions, for the earnestness of purpose that actuated that convention, and for the dire need that prompted the people to meet in convention and make these requests at the hands of the Government.

I shall not detain this committee of experts on this subject with any discussion of outgrown heresies or exploded fallacies, but I shall simply make, briefly and hurriedly, a few pertinent suggestions that occur to me.

It seems to me that the whole question as to whether we are entitled or have a right to ask or to demand, put it as you will, at the hands of the National Government any assistance is soluble by the expression of three questions: Is this work a work worth doing? Can this work be done? Is it a work that the National Government is called upon to do? If those questions be answered in the affirmative, then I take it that the relief will be accorded. It will be simply a question of the time when and the manner how that relief will be extended.

Is the work of reclaiming and protecting the Mississippi Valley one of sufficient importance to justify the doing of it? It means the protection of 30,000 square miles—20,000,000 acres—of land. As has been stated, it means the protection of an area equal to the States of New Hampshire, Vermont, Massachusetts, and Rhode Island, of which 20 per cent, or, to be accurate, 19.7 per cent, according to the most accurate information we have, is now in cultivation, of which 80 per cent is unreclaimed and not in cultivation, the unreclaimed but reclaimable portion being equal in area to the States of New Jersey, Delaware, and Maryland. Is the saving of such a territory to the Government a thing worth doing? If such a territory could be acquired at a cost of a million dollars, if the destruction of such a territory by the encroaching waters of the ocean could be averted at an expense of a million dollars, is there a member of Congress who would raise his voice against the expenditure?

What character of land is it? It is the geological cream of the country. There are about 4,000,000 acres in cultivation, 4,000,000 acres that probably can not be put in cultivation because subject to overflow from back water and other causes, no matter how you levee, and 12,000,000 acres of land that can be reclaimed, and will be reclaimed and rapidly put in cultivation if protection is guaranteed.

On that 12,000,000 acres of land, considering the imperfect methods of cultivation which we now use, considering the character of labor which we now have, within a very few years would be guaranteed—not as a matter of conjecture, but as a mathematical certainty, on a most conservative estimate—in addition to all the other agricultural

products that might be raised, the production of more than 2,000,000 bales of cotton, worth to-day more than $15,000,000.

Cotton, may it please you, Mr. Chairman, constitutes to-day, with what we raise under present conditions, 28 per cent of the total exports of the United States, 41 per cent of the total exports of agricultural products of the United States, an export, may it please you, which has levied tribute upon all of the civilized nations of the world to put money into our exchequer, which has depleted the treasuries and pried open the strong boxes of all the civilized nations of the world; an import trade resulting therefrom which in time of financial disaster proves the refuge and the safeguard of our financial institutions; but our greatest financial institutions are no more interested in this import, are no more interested in the price of this cotton, than every citizen throughout the length and breadth of the land, because the price of cotton goods is a question which touches the poorest of them. It is a tribute which these nations are paying under protest. The five greatest purchasing nations on earth of this product, in the ordered named, England, Germany, France, Russia, and Belgium, are to-day making every effort to rid themselves of this tax. From my own country Germany and England have procured men to be sent as experts to attempt the raising of cotton in foreign lands. The output of the Tuskegee Institute of Booker Washington, it has been said, can not supply the demand from Belgium alone for these experts, for whom high prices are offered.

In other words, Mr. Chairman, there is not to-day, among the civilized nations of the globe, a single nation so lacking in progress, a single nation with so depleted a treasury, that it would not eagerly grasp at the opportunity of making such an expenditure for such a return indefinitely more improbable than this. Will the United States, the most progressive and the richest nation on earth, flinch from the investment when the return is no venture but a fixed certainty? The United States, so rich in blood and treasure, that she expended $300,000,000 and 3,000 men in the purchase of the gem of the Antilles to give that largely into alien hands when so acquired? The United States, so alive to the commercial interests of its citizens, that it bought the Philippines at a cost of $20,000,000 and saddled itself with the responsibility, through the ages, of governing an alien people in a distant land for commercial reasons alone?

The United States, who is now, by methods that some people of our country claim to be questionable and tainted with bad faith to a sister Republic—in which complaint I have no sympathy—is endeavoring to acquire the right to pay $10,000,000 to be allowed the privilege of paying $200,000,000 to forward the commercial interests of her people? The United States, who is so jealous in guarding the commercial rights of her people, who is so keenly alive to the great economic truth that the commercial prosperity is dependent upon reaching the markets of the world that she would to-day issue a call to arms of every citizen of this vast Republic if need be to obtain the open door in Manchuria and China, simply to retain the right to sell to the yellow nations of the earth, to-day among our smallest purchasers of cotton products?

I say, sir, the efforts made by these nations and the work done by this Government answers in plain terms and answers in divers tongues, the commerce of the age answers, that the work is worth doing.

Can it be done? Fortunately it is not a question longer to be debated, not one for academic dispute or discussion. With the $5,000,000 of desolation and ruin that the flood of 1903 brought to the inhabitants of the valley, it brought the glad assurance that the levee question was one no longer to be debated, but the success of which had passed into history; for the reason, gentlemen, that the breaks did occur, six breaks practically in 1,140 miles of levee, 2:4 miles of levee swept away; that these breaks, fortunately for us, came after the crest of the wave had been reached, so that no longer could the old argument be made that if the breaks had not come the water would have gone indefinitely higher. The greatest flood we have ever seen had been chambered; the crest had come. The breaks gave no relief in that particular. We had stood the worst. So the Mississippi River Commission, the tribunal organized and created by Congress, announces among the results of the water of 1903 that it proves that the levees can hold the river, and not only that, but it proves exactly the amount of additional expenditure, of additional dirt, that is needed to complete the work and put it in a safe condition.

So I say, gentlemen, the work can be done. Is it a work that the National Government should do?

It is a work that the National Government should do. It is a work that the National Government will do, and for three reasons: One is, as has been said about the Mississippi River, it is the nation's great sewer. From 41 States and parts of States this water is hurled down upon the people of the lower valley—a simple, struggling fringe of agricultural humanity between the banks of the river and the hills, trying to restrain the water of the nation. In common law and in equity man can not do that with his own which will hurt another. This is the nation's own. Over it she has assumed jurisdiction. Control she exercises over it. She can not escape the responsibility. The maxim which is good between man and man will not be disregarded by a great nation in dealing with its own citizens.

In the second place, may it please you, Mr. Chairman, the nation will do it because the needs of commerce demand it, because the tribunal into whose care you have intrusted this question have said that the leveeing of the Mississippi River is essential and necessary to the commerce of the river; that the breaking of these levees and crevasses and the shouldering into the bed of the river therefrom make it impossible for the river to do its greatest carrying of the commerce of the nation.

Again, on the question of interstate commerce, there are to-day two lines of railway stretching through that entire valley dependent for their very existence upon the maintenance of these levees. The United States, in her wisdom, gave to the railroads of the West, to connect the East and West, an imperial domain for their creation. Will she withhold, now, this pitiful sum needed not for the creation but for the preservation of these trunk lines between the North and the South? Is there any ground upon which the two cases can be differentiated?

Again, Mr. Chairman, the United States will do this work, because she does not put her hand to the plow and turn back with the work unfinished. She has been spending $1,000,000 a year on this work.

Senator CLAY. How much has she spent altogether?

Mr. PERCY. $17,500,000.

Senator CLAY. How much more do you want to complete it? How much will it take?

Mr. PERCY. It will take about $18,000,000.

Senator CLAY. More?

Mr. PERCY. More. She has spent that. This work has to be done. It can not be done except by the Government. It is one of magnitude beyond that of local boards hampered by State constitutions and State lines, and, Mr. Chairman, doling out what it has contributed sufficient to erect a perfect system of levees along both sides of the river, if expended as it should have been expended, but doled out and collected by the harsh hand of the tax collector in driblets from year to year——

Senator GALLINGER. Did I understand you to say it will require $18,000,000 to complete it?

Mr. PERCY. To reach protection, yes, sir; to reach safety.

Senator GALLINGER. That is, $18,000,000 will accomplish the result?

Mr. PERCY. Yes, sir; will give us a perfected system of levees.

Senator GALLINGER. The National Government has contributed $17,000,000 and the States and municipalities about $30,000,000 more. Why will it not be completed in the near future if we proceed upon the basis upon which we have been acting in the past?

Mr. PERCY. The question is a pertinent one. The Government will do it. When will it do it? If governed by any rule known to business transactions, if actuated by any of the wisdom that prompts men in their individual investments, it will do it now; and, Mr. Senator, it will do it now for this reason——

Senator CLAY. How much does the last river and harbor bill carry? I have forgetten.

Mr. PERCY. About $25,000,000.

Senator CLAY. I mean for the Mississippi River. It is not that much?

Mr. PERCY. Two million dollars a year for four years.

Senator BERRY. If you will permit me, that is not for levee work only. A portion of it, the greater part of it, goes to the improvement of the channel.

Senator GALLINGER. About $1,000,000 is for levee work, and if the States and municipalities continue to pay $2,000,000, that will be $3,000,000. In six years we will have it completed on that basis.

Mr. PERCY. Let me say this: Of the money raised by the levee organizations a great deal of it goes for repairs, a great deal of it for guarding and maintaining the inside line of levees, a great deal of it to pay interest on the outstanding indebtedness contracted for levee purposes. Four million dollars a year for four years may complete this work. When will $1,000,000 a year do it? Will it do it in sixteen years or eight years? Gentlemen, it may not be in twenty years or twenty-five years. How many times that million dollars will have to be expended in replacing work washed away while these appropriations are being doled out in this way only the wisdom of infinite Providence can tell.

Senator CLAY. How much money would be spent annually in completing the work? How much should be used?

Mr. PERCY. Four million dollars a year is what the Commission says should be used.

(At this point Senator Nelson took the chair.)

The ACTING CHAIRMAN. The trouble, if you will allow me to suggest, with the present system is this: It is a sort of checker work. The local boards work certain reaches of the river, and the Federal Government works certain other reaches of the river, and they are not always in harmony—that is, one reach of the river will be handled and worked by a local board under local supervision and another reach of the river by the Federal Government, as I understand it. Am I correct?

Mr. PERCY. In a measure, yes; not altogether. There is absolutely the most remarkable harmony that ever existed in the expenditure of such a sum of money through such diverse agents and through so many years. It is not a question of lack of harmony. They spend the money where they think it is needed worst, knowing that it is needed along the entire 1,140 miles of levee, and their expenditure is limited, not by the necessities, but the amount of money they have on hand.

It is not like a railroad or a house upon which you can expend to-day $100,000 and come back six months later and expend $100,000 more and complete it, because you find what you have already done remaining intact. The high water of 1903 wrought a destruction of $5,000,000 on levee property and the property behind the levees. The next flood that comes along, while you are giving us a million dollars a year, and we are, by the most burdensome taxation, raising a million or two million more may inflict on the work you have already done $20,000,000 damage, and when we come for the appropriation year after next and you tell us you can give us a million, and you suppose in eight years we can finish, we are in infinitely worse plight than we are to-day.

Senator GALLINGER. If the Government gets back of this, the Government will then have to keep the levees in repair. You are going to have your damage just the same every year.

Mr. PERCY. No, sir. The damage has come from the levees not being high enough to hold the water. I want to say this to you: There never has yet been an hour in the levee history of the delta when any engineer connected with it would hazard the conjecture that the line was safe. They knew we were dependent simply upon the whim and caprice of the river, and the river at any unusual flood would overtop the levees as they were constructed. Give us those levees completed, and the revenue to-day of these districts is sufficient to maintain them and keep them, without a dollar of Government aid, if the Government should think it is a work we should carry on.

Mr. Chairman, it is not to escape the burden of taxation that these conventions are held throughout the delta. It is not to escape the burden of taxation that we are pleading to you now. It is for safety we are pleading. Every people desire to be relieved of taxation, but that is a secondary consideration. The desire is that the Government will pledge its faith to put enough money there, added to our efforts, if it is thought we should still make these efforts, to give us safety, to give us a country where capital can be invested in security, to give us the richest country to-day where the laborer can reap the greatest return for his toil that the world knows of.

Senator GALLINGER. Just one question. I am interested in the commercial end of this, which the gentleman from Ohio emphasized. We

have been spending this enormous amount of money on the Mississippi River. Is it a fact or not that the commerce has gradually decreased notwithstanding these appropriation?

Mr. PERCY. I think the commerce has not decreased, but the carrying capacity of the railroads has certainly increased. The tonnage has certainly increased.

Captain HENRY. The character of the commerce has changed, Senator, but the amount is greater now than it ever was before. One boat goes down there now that carried 58,000 tons.

Mr. Chairman, we thank you very much for the attention you have given us.

Senator BERRY. I want to ask to have printed as a Senate document the speeches made before the House committee and those made here to-day, and I would like to ask authority to have that done.

Senator GALLINGER. How voluminous are the speeches before the levee convention that was held at New Orleans?

Senator BERRY. They are not so very large. I should be glad to include those. I move that the committee request that the Senate print as a document the speeches made at New Orleans and before the two committees.

The ACTING CHAIRMAN. That will be taken as agreed to unless objection is heard.

The proceedings of the convention held at New Orleans are as follows:

INDEX.

A Work for the Nation by the Nation.

Liberal, adequate aid by the Government in the improvement of the Mississippi River and its tributaries was distinctly elevated into a living national issue by the convention of the Trans-Mississippi River Improvement and Levee Association, held at New Orleans October 27–28, 1903. Never in all the years since the justice of national assistance in this gigantic enterprise was first proclaimed has so great a step forward been taken; never has so emphatic and unqualified an expression in its favor been given by so numerous and representative a body of men, and never have such means for assuring the certainty of success been adopted. The whole country is now to be enlisted in behalf of this movement, and when Congress is asked, as it will be soon, to extend this rightful aid, so convincing a presentation of the case will have been made that no doubt can remain of favorable action by the nation's representatives.

Twenty-eight hundred delegates were appointed to this convention, a large number of whom were in attendance. One hundred and sixty-six cities and twenty-four States were represented, and besides Senators, Congressmen, and governors, there were delegates from commercial bodies, organizations, and municipalities covering the great Mississippi Valley basin from its eastern confines to its western borders. Veterans in river improvement and levee work, members of river commissions, and Senators and Congressmen who, as committeemen, have devoted many years to careful investigation and study of the subjects were present to give the convention the benefit of their stores of knowledge. Financiers of national renown attended and indorsed the movement. A Cabinet officer was one of the speakers for the cause, and all the influence of the Government's head was pledged in support through a personal letter of indorsement from the President himself.

In addition to these commitments, significant and invaluable as they are, favorable letters and telegrams were received from Senators and Congressmen, sufficient in number, it is computed, when added to known champions of this national movement, to insure legislation by Congress entirely favorable to the cause.

There was dignity and majesty and might in every movement of the meeting. The whole question of the occasion and the right of the Government to take a leading part in the great work of river improvement and levee construction was exhaustively and convincingly presented, and the proceedings of the convention constitute a treatment of the whole tremendous question which, prepared in pamphlet form, will remain a text-book of enduring interest and permanent value. Unlike many conventions, the importance of this gathering did not cease with its adjournment. The benefits to come will be unceasing, and, like a council of war, the generals here convened separated but to act on the conclusions that were reached. The campaign of education will go on in congressional halls and wherever influential bodies of men and individuals may be found, until the whole country knows and concedes the justice and the advantage of large governmental appropriations for the work in hand, and members of Congress will perceive that in taking the action desired they are but following an overwhelming preponderance of public opinion.

By an arrangement with the executive committee of the association, the Manufacturers' Record prints the convention proceedings in full, this constituting the only complete and authorized publication—the only publication, in fact, outside of the newspaper reports which appeared from day to day in the local press. This publication has been subscribed to by numerous organizations and individuals throughout the country, and it will be circulated wherever sentiment favorable to Government action is sought to be aroused. Herein are presented the speeches delivered and the letters and telegrams received. Herein are concentrated all the conclusions of the most eminent specialists and statesmen, who have, with large vision and expansive grasp, viewed the whole question of the improvement and control of the Mississippi and its tributaries, and brought their seasoned wisdom to a solution of the problems it presents. Herein is the subject treated in all the broad nationalism which a thorough comprehension of its magnitude involves, and herein are convincing arguments arrayed to demonstrate that not the farmers and the villagers of the Mississippi Valley alone, not New Orleans or any other city, are to be the sole beneficiaries from the work in hand, but every interest in the whole million and a quarter square miles of the area the Mississippi drains, every incident to the civilization of this almost half of the nation's domain, is affected by the better navigation and surer protection from disaster which are contemplated by the improvement and levee work proposed. And in the prosperity and well-being of this vast section, capable of a development such as the world has never seen, no part or parcel of the nation itself can fail to have an interest, vital and personal, whether voluntary or not.

In the speeches and resolutions are to be found a complete survey of the entire question of improvement for navigation and protection from overflow. And it is noteworthy and significant that the navigation of the Ohio and other tributaries of the Mississippi received explicit and unqualified indorsement as a part of the whole plan of Government aid requested. What is proposed is, in effect, a union of all interests and a combination of efforts, so that by one comprehensive and pervasively intelligent plan the navigable waterways of the Mississippi River watershed may be brought to a permanent condition of the highest efficiency, while at the same time the lowlands, fertile almost beyond compare, shall be effectively and continuously protected from the overflows which occur when the Mississippi is swollen from waters of its tributary streams.

Expert testimony was presented to determine the value of the levee system for the Lower Mississippi as against reservoir or outlet plans, which were pronounced unfeasible, here at least. There is no proof, it was declared, that levees result in a gradual elevation of the head of the river, while careful soundings indicate a more permanent channel and a benefit, therefore, to navigation. It was accordingly resolved that there should be completed continuous system of levees from Cairo to the Passes. A liberal estimate of the cost of this work was put down at $20,000,000, and it was urged that instead of $1,000,000 or so a year, as at present, the Government should appropriate $2,000,000 or $3,000,000 a year, so that the work may be brought to completion in the smallest possible term of years.

The right and the duty of the Government to undertake this work were held to be as clearly defined as its right and duty to reclaim the

arid lands of the West or to set up defenses along the coast or to control the navigation of the rivers. Instead of leaving to riparian landowners the great burden of the expense of building and maintaining levees, as at present, it was furthermore held to be obligatory on the General Government to bear the larger part of the cost of protection from overflows by water which largely originates in other States.

On the direct benefits which will result to the lower Mississippi Valley, and indirectly to the country at large, from complete protection from overflow, many of the speakers dwelt with eloquent and alluring prophecy. It is estimated that complete levee protection will make possible the reclamation of at least 20,000,000 acres of bottom lands, now given over to swamps. Leaving out of consideration the value of the gum and cypress and other growths with which they are covered, these rich lands, when drained and cleared, would grow from a bale to a bale and a half of cotton to the acre, worth from $50 to $75, as well as produce other crops—rice in some cases, cane in others, and corn and forage of much value. Instead of being worth $5 an acre, more or less, they would become worth $30, $50, $100, or more, adding fabulous sums to the wealth of the country and supporting a population of added thousands on thousands of prosperous people.

There can be no great increase in cotton production in this country until more lands suitable for cotton are opened up. Consumption of cotton is overtaking production, and prophecies are frequently made that the time must soon come when American spinners will require all we raise. Unless the cotton acreage is rapidly and materially increased there must be a constantly recurring famine in cotton and an ultimate permanent high price for the manufactured goods. And it is at present not demonstrated that any considerable addition to the world's cotton supply is to be relied on from attempts to establish the industry in Africa and elsewhere. However, in any case the Mississippi River bottom lands, when reclaimed and protected from overflow, would constitute the richest agricultural section in the world. They would be taken up and tilled by enterprising and active planters and farmers from everywhere.

Statistics were presented to show how enormously the reclamation of these lands would add to the wealth of the section in all ways and to the advantage of the nation. Side lights were thrown on the subject by telegrams from George J. Gould and others. Mr. Gould wired his sympathy with the objects of the convention, and referred to the fact that his companies are extending and building lines between St. Louis and New Orleans and between New Orleans and the West, most of the $40,000,000 or $50,000,000 required being spent in the Mississippi Valley on the expectation and belief that the railroad property will be protected from floods and inundations. B. F. Yoakum, of the Frisco road, also wired his sympathy, and referred to the $50,000,000 his company is expending on its St. Louis-New Orleans line and terminals, a considerable portion of which road would be affected by overflows. The construction of these lines became a possibility only through the efforts that have been made to confine the waters of the Mississippi. Towns and sections hitherto without railroads will thus be provided with the transportation facilities necessary for their development, and New Orleans and St. Louis, as well as the towns and cities between and beyond, will become beneficiaries direct and to a vast degree. The destruction of property, the interference

with travel, and the derangement of mail communications by overflows and floods is declared so great and general a public inconvenience and loss as furthermore to call for national recognition.

A feature of the resolutions adopted, which has aroused vast interest in the East and received an enthusiastic reception in the North, was the unqualified approval given to the movement for the construction of a waterway to connect the Lakes with the Mississippi and the Gulf—a crystallization of sentiment voiced so long ago as 1845, as evidenced in resolutions recently published by the Manufacturers' Record, which were passed at a river-improvement convention held in Memphis in that year. And also in those resolutions of near sixty years ago is the argument now advanced—that as a military necessity the Government should improve and preserve the navigation of the Mississippi.

Of the advantage New Orleans will gain from having carried out the work as called for in the resolutions passed at the convention just held there was public and private discussion at length during the convention and frequently since. That it will benefit to a large degree is a conclusion reached at once. That this benefit will be other than an advantage to the whole South and the country at large as well is a proposition strenuously denied. With the cultivation and development of vast sections of contiguous lands now idle a larger local trade would follow as a matter of course, but in the benefits the manufacturers of the country generally would have a share. An examination of the brands of machinery, clothing, household goods and wares of any family in the country anywhere would reveal how impossible it is for a waste place to be occupied and built up without advantage to widely distributed industries. Made safe from inundations, the valley lands would be occupied by many thousands of settlers, who would become revenue producers for the railroads.

With improved navigation from the Lakes and far up the Ohio the whole Mississippi Valley would become, to an increased extent, tributary territory to the cities along those waterways. New Orleans will be the great gateway from the Mississippi Valley drainage basin to the countries south and even to the east and west of America—immeasurably greater on the completion of the isthmian canal. New Orleans is even now getting back to her position of supremacy as the trading port for all this valley territory, a position assigned by her nature, occupied without question before 1861, and only temporarily relinquished when artificial outlets of necessity diverted eastward the traffic of her territory, following the shock of war and the destruction of her facilities for trade in the desolation and devastation that ensued. The largest city of the South, in the richest agricultural State in the Union, the trading port of the most fertile valley in the world, it is small wonder that New Orleans is now outranked by but one other American city as an exporter of grain, is growing constantly in every way, and is looked upon as certain to become one of the greatest trading marts of the world. And when shippers find it more profitable to trade through this port they are gainers in wealth, and the whole country is a partaker in the benefits derived.

ALBERT PHENIS.

PRESIDENT ROOSEVELT'S ENCOURAGEMENT.

WHITE HOUSE,
Washington, September 28, 1903.

MY DEAR MR. PARKER: Permit me through you to express my very great interest in the work of the Interstate Levee Convention. Exactly as I have taken a keen interest in irrigation in the arid regions, so I feel that the movement for thoroughly protecting the Mississippi lowlands by levees is one of importance to the whole country, no less than to the people immediately adjoining the great river. I wish all success to your convention, and shall follow its proceedings with close attention.

Sincerely, yours,

THEODORE ROOSEVELT.

MR. JOHN M. PARKER,
816 Union Street, New Orleans, La.

CONVENTION OF THE INTERSTATE MISSISSIPPI RIVER IMPROVEMENT AND LEVEE ASSOCIATION, HELD AT NEW ORLEANS, LA., ON OCTOBER 27 AND 28, 1903—OFFICIAL REPORT.

FIRST DAY'S PROCEEDINGS.

The convention was called to order at 12 noon by President Charles Scott, Capt. J. W. Bryant acting as secretary. After the opening prayer by the Rev. Beverly B. Warner, and after a photograph had been taken of the assembly, the chair invited to the platform all governors, ex-governors, and members of Congress who were present. President Scott then delivered his address to the convention. (For President Scott's address see page 44.)

At the conclusion of President Scott's address the convention adjourned until 3.15 p. m.

The convention reassembled at 3.15 o'clock in the afternoon, with President Scott in the chair, Secretary Bryant at the desk, and a full membership present.

President SCOTT. Gentlemen of the convention, if an Englishman in the heart of London, just where the great English people have erected their statue to the immortal victor of Trafalgar, should arise and attempt to introduce to the assembled populace Edward VII, his work would be no more unnecessary and superogatory than would be mine if I attempted to introduce to you the next speaker, your gallant governor, the Hon. W. W. Heard. [Great applause.]

(For the address of Governor Heard see p. 60.)

President SCOTT. Gentlemen of the convention, I regret to announce that the distinguished mayor of this city is unavoidably detained. Mr. Secretary, will you kindly read the letter from Mayor Capdevielle.

Secretary Bryant then read a letter from Mayor Capdevielle, as follows:

CITY HALL, *New Orleans, October 27, 1903.*

MR. J. N. LUCE,
Chairman Levee Convention, City.

MY DEAR MR. LUCE: I deeply regret my inability, on account of pressure of business, to attend this afternoon's session of your convention.

I regret it all the more, as I went to the convention hall this morning for the purpose of telling your members verbally that which I now beg leave to transmit in writing.

I am particularly pleased to see the manner in which the delegates have responded to the call, and the interest manifested by them in the cause convinces me that their efforts will be crowned with success.

You can, it is not necessary for me to say, depend upon our hearty cooperation. I would have been pleased to extend personally to the members of the convention, as I now do, a warm and most cordial welcome.

Yours, very sincerely,

PAUL CAPDEVIELLE, *Mayor.*

President SCOTT. Gentlemen of the convention, it seems that this august assemblage, with its handsome personnel, has made a distinct impression on the photographers. Mr. J. E. Edmonds, representing the Times-Democrat, states that you have grown in beauty more and more as time goes by, and he requests the honor, in the name of his great paper, of taking your photograph. If, without rising, the members of the convention will be kind enough to turn their faces, or their chairs, in the opposite direction, the photographer will press the button and do the rest. [Laughter and applause.]

Thereupon a flash-light photograph was again taken of the convention.

President SCOTT. The next thing in order is the election of a temporary chairman.

Hon. THEODORE S. WILKINSON, of Louisiana. Mr. Chairman and gentlemen, it is my privilege to present to this convention the name of a gentleman who has ever been a true friend of our great cause. I present the name of a gentleman who, a quarter of a century ago, had won distinguished honor and esteem in public life, and who, through all the years that came afterwards, never forgetting his duty to his people, his State, and his country, made a name famous in the industrial and commercial world, so that wherever that name is known it is a synonym of honor and probity everywhere.

But, Mr. President, I don't speak of him now as a leader in industrial and commercial life. I speak of him as a member and a friend of this association and of the people of our valley for nearly three-quarters of a score of years. I speak of his associations with all our past efforts for the people of the valley. He has been a friend of the farmer, whose products he has sought to bring unvexed to the sea. He has been a friend of the merchant, whose wares have been brought closer to buyers on various shores. He has been a friend to the factory owner and the factory worker, whose products he has helped to send, at a cheaper rate, not only to England and to France, but as far as distant Siberia itself. Mr. Chairman, as a representative of those who live behind the earthen bulwarks that guard us against the mighty floods that dash against our doors and sometimes through those doors; as a dweller among all the thousands who live behind these slender ramparts; as one who has suffered from the ravages of this great river, and as one who for many long recurring years has ever fought with all the fire of his manhood against this great danger on our front, I present the name of a gentleman who has been, and ever will be, until death claims him as its own, a friend of all the people of all the Mississippi Valley, ex-Lieutenant-Governor Stanard, of Missouri. [Great applause.]

Mr. Frank Gaiennie, of St. Louis. Mr. President, I trust that this convention will indulge me for a moment in the pardonable pride that I feel because our fellow-delegate from the city of St. Louis has been mentioned for the temporary chairmanship of this body. Governor Stanard has stood, from the time of the jetties, when he was in Congress, in favor of the alleviation of the people of this great Mississippi Valley. We of St. Louis are not only bound to you by the ties of consanguinity, but by commercial ties, and by everything that affects the welfare of the people of this great valley of the great Father of Waters. We are not only here to-day with you, but we are for you to the end. [Applause.] We come from our Western homes down here with our hearts filled with sympathy, because we can hardly understand why these great flood heads are turned on you unless we help provide a remedy for you. [Applause.] We come, too, with the boast that St. Louis has always been represented in every river and harbor convention that has ever been held in this valley. [Applause.] We have never asked for anything locally unless we believed that it would benefit the river from the Falls of St. Anthony to the Gulf of Mexico.

Governor Stanard will carry weight in your deliberations, and in Congress he will carry votes from our northwest country. It was only the other day that I was in Davenport, at a river convention, when I was chosen to make one of the delegation to come down here and express the sympathy of those people with this convention in the great subject which you are undertaking to deal with. All that northwestern valley, from Cairo to St. Paul, from the mouth of the Missouri to its headwaters, has ninety votes in Congress, and, my friends, that's what counts after all. [Applause.] My people sent me to come here with words of sympathy, and in your selection of our fellow-townsman, whom we respect, and who is one of the best citizens we have in St. Louis, public spirited, honest, tried and found worthy, we hope that you will confirm the nomination made by the gentleman from Louisiana. [Applause.]

Col. W. T. Dowdell, of Illinois. Mr. President, as delegate at large from Illinois, appointed by Governor Yates of that State, and as delegate from Memphis, appointed by Mayor Williams, of that city, I am here as a delegate from two States, and yet I am not twins. As Congress has enacted a law against polygamy, I guess I will have to select between the two, and not that I love Memphis less, but Illinois more, I will ask to be introduced as the gentleman from Illinois. Gentlemen of the convention, as delegate from a sister State I rise to second the nomination of Governor Stanard, of St. Louis. We in Illinois claim him as our own. It was as schoolmaster in a rural portion of Madison County, Ill., Governor Stanard entered upon the battle of life. A year later he accepted the position of bookkeeper for the commission house of Samuel Spruance, in Alton, displaying the energy and industry that have characterized his life. He kept the books and found time to spend three days a week on the road, soliciting patronage for the firm. In a few years Mr. Spruance died and his business house was closed. Young Stanard, in order to reap the benefit of his acquaintanceship on the road, opened a commission house in St. Louis, reaping a rich harvest. In a few years he returned to Alton and purchased the flouring mills of S. & P. Wise. Soon after his mills were destroyed by fire. Characteristic of the man, he rebuilt at once on a

much larger scale, and for the past thirty years has been turning out 1,800 barrels of flour daily, amassing for himself a large fortune. While his home has been in St. Louis, his principal business interests are and have been in Alton; therefore Illinois claims him as her own.

Gentlemen of the convention, I congratulate you upon starting the work of this convention along liberal lines. Governor Stanard is a man of broad and liberal views. The selection of such men to formulate your work is a long step in the right direction and toward achieving success. Your committee on resolutions should be composed of the same kind of men, who will formulate a platform of principles broad enough for all and good enough for the most skeptical to stand upon, declaring for the improvement of the Mississippi River and its tributaries, for the purpose of improving their channels for navigable purposes, the leveeing of their banks for the reclamation of swamp and low lands from overflow. Of course, the work will commence at the jetties, and proceeding north, when Cairo has been reached and the work successfully accomplished, that far making the levees absolutely safe against the raging floods of the mighty Mississippi.

Then the Ohio, the most important commercial artery of "the Father of Waters," should be improved to its source; the Red River, the White River, the Arkansas River, the Tennessee, the Cumberland, and so on to the raging waters of the old Missouri, and on up to St. Paul, Minn., not forgetting the Illinois River, one of the smallest in size, but greatest in power of them all. That river washes the eastern border of Peoria, a city that paid into the Federal Treasury the last fiscal year ending June 30, 1903, the sum of $32,413,033.13, which is more than five times as much as the amount paid by the entire New England States during that period of time and almost one-eighth of the amount collected last year from the entire United States. All the New England States combined paid last fiscal year $6,023,650.77, and the entire amount of internal revenue collected and paid into the United States Treasury last fiscal year ended June 30, 1903, was $230,740,382.57, while the city of Peoria, as said before, paid nearly one-eighth of the whole sum. Since the internal-revenue law went into effect, July 1, 1862, Peoria has paid into the Federal Treasury up to the 30th of last June $506,354,708.27, and at least $10,000,000 since the 30th of last June. I give these figures as given to me by Captain Rennick, collector of internal revenue of the Peoria, Ill., district, and vouch for their correctness.

Gentlemen of the convention, I say that those who furnish the grease to make the wagon go have a right to the transportation of their freight by the best possible means. We have the right on our side. We pay the money into the Federal Treasury, and backed, as we are, by the votes of a majority of the American people, in the language of Old Hickory, "By the eternal" we have a right and will ride in the band-wagon of internal improvements.

Gentlemen, "No pent-up Utica contracts your powers, but the whole boundless continent is yours." The Mississippi Valley, commencing at the Alleghanies in the East, extending to the Rockies in the West, from Canada on the North to the Gulf of Mexico in the South, contains a territory for richness of soil and productiveness in agricultural pursuits surpassed by none and equaled only by the imagination of those possessing the most vivid imaginary powers. There is nothing under the shining sun of Heaven that succeeds with Congressmen,

Senators, and Presidents like votes. We have the votes. Impart that information to Congress through the press and you will find it at your feet, ready, willing, and anxious to do your bidding. Demand this as your right and your efforts will be crowned with success. [Applause.]

Governor Stanard was then elected temporary chairman of the convention by a rising vote.

President SCOTT. The great State of Missouri, as you have always heard, has ever been a steadfast and stalwart friend of Mississippi River improvements, and has ever stood ready to lend a helping hand in the reclamation of the alluvial lands. Among all the sturdy figures there, among all the unique men who have stood out in bold prominence, ever ready to help in this noble fight is the distinguished gentleman whom I now have the honor of presenting to this convention as its temporary chairman. [Applause.]

Ex-Governor Stanard, upon taking the chair, addressed the convention as follows:

Mr. Chairman and gentlemen, I hardly know what I will be expected to say after the remarks which have been made. I will, however, say thank you.

I am very much obliged for the honor you have conferred upon me by designating me to preside temporarily over the deliberations of this convention. I have been very much interested in the things I have seen and the things I have heard since I have been in New Orleans to-day. This is the largest river-improvement convention which I have ever attended. However, I haven't attended many assemblages of this kind for quite a number of years. For some reason we haven't had as many up in the Northern States as we used to have ten or fifteen years ago. It seems to me, though, that the people who are here from the country north of Cairo ought to take new inspiration on the subject of river improvement after we have observed the grand example given to us by the people of the city of New Orleans, the State of Louisiana, and the other States adjoining here, who are so specially interested in the matters which this convention was designated to consider. [Applause.]

We are here to consider the question of the improvement of the levees, and, I may say, of the waterways between Cairo and the jetties at the mouth of the Mississippi River. But there is something more necessary to be done in the region of country which I have described, and which most of you represent, than the construction of levees. It is necessary to have permanent improvement the year round, and year after year; and some years it is necessary that dredging improvements should be made between the mouth of the Ohio River and the city of Memphis. I believe there is nothing to interfere with the navigation from Memphis down to the jetties at any season of the year, and not nearly as much to be done in the shape of dredging between Memphis and the mouth of the Ohio River as there is in the region of country north of the mouth of the Ohio. It seems to me, therefore, that we should get and will have new inspiration, because not a great deal has been done north of the Ohio.

Now, at the Congress before last, almost two years ago, there was made an appropriation of $2,000,000 a year, for four years to come, for the improvement of the levees below Cairo to the mouth of the Mississippi River. That, of course, is a considerable sum in itself, and

when we consider the remarks of your president, Mr. Scott, who addressed us this morning, that during the great flood within the past year only some three or four places in your levees were interrupted or overflowed, we must really come to the conclusion that you have been doing a wonderful sight of work toward the improvements which are necessary, and that the people of the northern section ought to emulate your example [applause], get to work, and improve the waters of their portion of the country. To do this we want your assistance. If it is given, and if the rivers are made absolutely navigable the year round north of Cairo, the exportation of the products of this country to foreign shores will always be by way of New Orleans and the mouth of the Mississippi River. [Applause.]

We want your influence, and you shall have ours. [Applause.] Notwithstanding these $2,000,000 which you get per year I can well comprehend that it is necessary to make these improvements of the levees permanent and substantial, even though it cost $20,000,000 or $30,000,000. [Applause.]

I am sure, from some things that have happened in the past few weeks, that the people in the northern portion of the Mississippi Valley are taking a deep interest in the improvement of the western rivers. They have held two conventions, one at Evansville, recommending the improvement of the Ohio River, and one last week at Davenport, recommending the substantial improvement of the Mississippi from Cairo to its headwaters. At the last convention resolutions were adopted asking Congress to appropriate $15,000,000 for the improvement of these northern rivers, and this begins to show that we are taking a deep interest in the work.

There is another element to be considered, and that is that almost half of the States represented here to-day are north of the city of Cairo or the mouth of the Ohio River. [Applause.]

Gentlemen, we propose to emulate your example and do what we can for the promotion of the interests of the lower Mississippi, and we want your help in the work on behalf of the northern waters of that great stream. [Applause.] You know, and we all know, that if the Congressmen from all of the twenty-one States that are represented here will unite in this grand work, such appropriations as are necessary for the improvement of the banks in the lower valley and for the dredging and improving the navigation of the rivers above Cairo can be had at any session of Congress. [Applause.] But it takes united and continuous and unceasing energy and work along these lines. [Applause.]

One of the reasons why the northern country that I have described is so largely represented and is taking so great an interest in the improvement of the Mississippi River and its tributaries is on account of the lack of transportation facilities in our section. Our industries seem to have grown much more rapidly than our transportation facilities have done. It is almost impossible sometimes for merchants to get their goods into their stores and warehouses or for manufacturers to send their products out to the world because of the lack of transportation facilities generally. Therefore we want the Mississippi River opened from the headwaters to the Gulf [applause], and then a large share of goods and products that we send abroad will find their way down that great river past the city of New Orleans into the Gulf of Mexico, to be distributed to the world. [Great applause.]

Gentlemen, we have heard a great deal of talk about the isthmian canal, involving an expenditure of perhaps $200,000,000. How are the products of the northern and central country, and the cotton, the sugar, the rice, and all the fruits of this fertile soil to be exported to the people of the world? Some day, not in my time, but during the life and activity of many of the younger men of this convention, that canal will be observed as of the greatest importance [applause], and then there will be need for increased transportion facilities in this section to distribute the products of the United States to the people of the world. It is well, indeed, for us to look a little ahead.

Now, gentlemen of New Orleans, we want you to have whatever you ought to have in order to make your levees complete and in order to save your crops of cotton, of sugar, and of rice from overflow. [Applause.] We want to help you. But don't forget us up in the center of the country. [Laughter and applause.]

The State of Illinois is the fourth in point of population in the United States, and the State of Missouri is the fifth, and there are no two States that are increasing in wealth and population and in general industrial activities, I believe, more rapidly than those two States. [Applause.] We must not forget the State of Kansas, with her 100,000,000 bushels of wheat and her 200,000,000 bushels of corn this year, and other farm products in the same proportion. We must not forget Nebraska, coming sixth in point of agricultural production. We must not forget Oklahoma [applause], producing 40,000,000 bushels of wheat this year and other products in proportion. These are matters that we have got to take into consideration. There is no part of this country, no part of the world, that is increasing in wealth, in population, and in industrial activities more than the country in the center of the United States, say in the valley of the Mississippi. All that country is tributary to New Orleans. [Great applause.] Excuse me for talking so long. [Applause, and a voice: "Go ahead."]

Mr. MURRAY F. SMITH, of Mississippi. Mr. Chairman, I nominate for temporary secretaries of this convention two gentlemen who have been identified with Mississippi River interests for many years—Capt. J. W. Bryant, secretary of the waterways commission, and W. A. Everman, secretary of the Interstate Levee Association. [Applause.]

The motion being put, was unanimously carried, and the chair then recognized Mr. J. L. Vance, of Ohio, who addressed the convention.

(For the speech of Mr. Vance, see p. 64.)

Mr. JOHN M. PARKER. I move for the appointment of a committee on permanent organization, to consist of one member from each State, to meet as soon as possible in the anteroom and to report to this convention their suggestions, so that we can get to the practical work as soon as possible.

Mr. HASTINGS, of Cairo. I move that the delegates from each of the States represented name two members on the committee on permanent organization.

Mr. PARKER. I move that it be entirely left to the discretion of the chair.

The CHAIR. Oh, no; I won't do that. Mr. Parker moves that one member from each State be appointed on this committee on permanent organization. The gentleman on my left moves that two members from each State be appointed. Do you still insist upon your motion, Mr. Parker?

Mr. PARKER. I do.

The CHAIR. Then the motion made by Mr. Hastings will have to be in the nature of an amendment, if he insists upon two members.

Mr. HASTINGS. I offer it as an amendment.

The motion of Mr. Hastings, being put to the convention on a viva voce vote, the Chair declared himself unable to decide. A rising vote was then taken upon the amendment offered by Mr. Hastings, and which was declared lost by the chair. The question recurring upon the original motion of Mr. Parker, the same was put to the convention and carried unanimously.

The chair then announced the following as the committee on permanent organization: John M. Parker, chairman; Hon. Isaac M. Mason, Missouri; Hon. L. M. Magill, Illinois; Hon. Leroy Percy, Mississippi; Col. J. L. Vance, Ohio; C. L. Robinson, Kentucky; George H. Anderson, Pennsylvania; E. W. Shirk, Indiana; Sam. Phillips, Tennessee; J. Hy. Lafaye, Louisiana; Greenfield Quarles, Arkansas; R. W. Levy, New York; John A. McIlhenny, Louisiana.

Col. J. L. VANCE, of Ohio. I ask that my name be withdrawn, and that Judge John S. Connor, of Cincinnati, be substituted.

There being no objection, the substitution suggested by Colonel Vance was made.

Colonel VANCE. Is a motion in order in relation to the committee on resolutions?

The CHAIR. I understand that Mr. John M. Parker has an important letter to read from the President of the United States. I am sure that the convention would like to hear it.

Secretary BRYANT. Mr. Parker has gone out with the committee.

At this stage, upon motion of Gen. T. C. Catchings, of Mississippi, the convention took a recess for five minutes, the delegates remaining in their chairs.

AFTER RECESS.

Secretary BRYANT. I am requested to notify all those who hold round-trip tickets of the Western Passenger Association and the Central Passenger Association that they will have to be signed by me as secretary of the convention. I will be at the service of anybody on to-morrow morning from ten minutes past eight up to the time of the assembling of the convention, and those that don't have their tickets signed at that time can have it done in the afternoon. I will be here at the hall for that purpose.

The CHAIR. I have the pleasure to say that Mr. Wilson, Secretary of Agriculture, will address this convention this evening at 8 o'clock. I now take pleasure in introducing Mr. John M. Parker, of New Orleans. [Applause.]

Mr. PARKER. Gentlemen, before reading the report of the committee on permanent organization, it gives me great pleasure to read a letter to you from the President of the United States. [Applause.]

WHITE HOUSE,
Washington, D. C., September 28, 1903.

MY DEAR MR. PARKER: Permit me, through you, to express my very great interest in the work of the Interstate Levee Convention. Exactly as I have taken a keen interest in irrigation in the arid regions, so I feel that the movement for thoroughly protecting the Mississippi

lowlands by levees is one of importance to the whole country no less than to the people immediately adjoining the great river. I wish all success to your convention, and shall follow its proceedings with close attention.

Sincerely, yours, THEODORE ROOSEVELT.

Mr. PARKER. The clearest and most unequivocal document in favor of national control that has ever been issued in this or any other country. [Applause.]

Mr. MURRAY F. SMITH, of Mississippi. Mr. Chairman, I want to offer the following resolutions:

"*Resolved*, That the thanks of the people of the Mississippi Valley are hereby tendered to President Roosevelt, through this convention, for his manly and patriotic letter indorsing the purposes for which this convention has been called, to wit, the deepening and improving of the channel of the Mississippi River and the protection of the vast area of alluvial and fertile territory along its banks from devastation by floods, thereby conserving and facilitating the vast and growing interstate commerce already transacted through the medium of great railroad systems behind the levees.

"*Resolved further*, That the chairman and secretary of this convention be requested to wire these resolutions to the President."

The resolutions offered by Mr. Smith were put to a vote and adopted unanimously.

Mr. Parker then read the report of the committee on permanent organization, as follows:

NEW ORLEANS, LA., *October 27, 1903.*

Hon. E. O. STANARD,

Temporary Chairman Interstate Mississippi Levee Convention.

SIR: The committee on permanent organization beg leave to report as follows:

They recommend that Hon. Charles Scott, of Rosedale, Miss., be elected the permanent chairman of this convention.

That John W. Bryant, of Louisiana, and William A. Everman, of Mississippi, be elected permanent secretaries.

They further recommend that there be a committee on resolutions, to consist of two delegates from each State represented in the convention and ten delegates at large, to whom all resolutions shall be referred for consideration without previous debate, and that the members of this committee shall be appointed by the permanent chairman.

Having now fulfilled all the duties incumbent upon them, your committee request their discharge.

Respectfully submitted.

JOHN M. PARKER, *Chairman.*

The report of the committee on permanent organization was received and adopted unanimously, and Mr. Charles Scott thereupon assumed the chair.

Mr. SCOTT. Permit me to return my profound thanks for this distinguished honor. What is the pleasure of the convention?

Mr. KING, of New Iberia, La. Is this the time for resolutions?

Mr. W. H. STOVALL, of Mississippi. I would suggest that a committee on resolutions be appointed before any resolutions are received, otherwise you have no committee to which to refer them.

The CHAIR. There is, properly speaking, nothing before the convention.

Mr. DOWDELL. I move that the chairman appoint a committee on resolutions.

Which motion, being put, was unanimously carried.

The CHAIR. The chairman will announce the committee when we meet here this evening at 8 o'clock; you have been wearied with quite a long attendance. It is suggested that the convention take a recess until 8 o'clock, and if there is no objection, that will be done.

(Recess until 8 o'clock p. m.)

NIGHT SESSION, OCTOBER 27.

The convention was called to order at 8 o'clock p. m., with President Scott in the chair, Secretary Bryant at the desk, and a number of delegates present.

Secretary BRYANT. I have been requested to announce that the cotton exchange, on the corner of Carondelet and Gravier streets, is open to the visiting delegates and invites a call from them. Their badges will admit them to the floor of the exchange. The same invitation is extended by the New Orleans Board of Trade, and also by the Young Men's Gymnastic Club, on Rampart between Canal and Custom-House streets. I also announce that the New Orleans Railways Company tenders a trolley ride to the delegates for 5 o'clock to-morrow afternoon. The starting place of the cars will be announced at the morning session to-morrow.

There will also be a river excursion tendered to the delegates and the ladies. The boat will leave the head of Canal street Thursday afternoon at 2 o'clock, and will return to the wharf at 5 o'clock, which will give delegates time for dinner and to leave on the evening train. The excursion will take in the river front, going up as high as Southport, about 9 miles above Canal street, which will afford a view of the Stuyvesant wharves, with its elevators, and the Texas and Pacific wharves, with its elevators. The boat will also go down the river to Port Chalmette, the national cemetery and the naval dock, and thence on down to the sugar plantations, where it will stop so as to give the delegates an opportunity of going into the sugar-house and observing the process of manufacture.

Chairman SCOTT. Gentlemen of the convention, it is well sometimes that we take a retrospect. The levee cause, the reclamation of the great alluvial basin of the Mississippi River, is now at the high tide of prosperity. I think we can well assume that on the adjournment of this distinguished convention, by following up our efforts in a proper way, we will necessarily secure a larger assistance from the General Government than we have ever been able to get in the past, and that ultimately the National Government will relieve us in large measure of this onerous burden. This has not always been the case. Going back some years ago it was impossible to get an appropriation from the national Congress for levees per se. Even those who were most ardently in favor of internal improvements did not dare at that time to advocate such an advanced measure on the floor of the House of Representatives or in the United States Senate.

The way has been long and the wind has been cold, and standing out prominently throughout the struggle, I may say, without any discrimi-

nation against others, were a band of distinguished valley statesmen who never shirked their duty and whose services to the Mississippi Valley should be ever remembered with gratitude. One of these gentlemen come from my native State, Gen. T. C. Catchings, known far and wide as the levee champion. [Applause.] With him, working shoulder to shoulder, trusted brothers in arms, as it were, were two distinguished Louisianians who always did the full measure of their duty. One these was Senator Gibson, now passed away; the other is is the distinguished gentleman, Hon. N. C. Blanchard, whom I now have the honor of introducing to you. [Great applause.]

(For speech of Judge Blanchard see p. 66.)

President Scott. We have with us to-night, gentlemen of the convention, a very distinguished visitor, a member of the President's official family, who, in answer to our urgent invitation, has kindly consented to address you. I have the honor of introducing Mr. Secretary Wilson, of the Department of Agriculture.

(For the speech of Secretary Wilson see p. 72.)

Chairman Scott. Gentlemen of the convention, my observation teaches me that the great State of Louisiana is always equal to every emergency. She always raises, for instance, big crops of cotton; she can be relied upon to raise big crops of rice; she has been known as the largest producer of sugar cane in America, and we find that she continues now, as in the past, to raise plentiful crops of great men and accomplished statesmen. [Applause.] And so as you have lost in Congress by death Senator Gibson, a very useful man in connection with your levee work, and as the other great levee champion, Judge Blanchard, has retired to accept judicial honors within the borders of your State, another Richmond has entered the field. Permit me to introduce to you the Prince Rupert of Louisiana politicians, Hon. Joseph E. Ransdell.

(For the speech of Congressman Ransdall see p. 75.)

Chairman Scott. The chair will now announce the list of the committee on resolutions. It will be composed of the following gentlemen:

Members at large.—T. C. Catchings, chairman, Mississippi; John M. Parker, Louisiana; W. J. Daly, Indiana; Leroy Percy, Mississippi; J. N. Luce, Louisiana; Capt. W. B. Mallory, Tennessee; Capt. Patrick Henry, Arkansas; Col. Green Clay, Missouri; C. F. Huff, Missouri; George Parsons, Illinois.

Members from States.—J. E. Williams, Indiana; J. H. Odell, Indiana; J. F. Ellison, Ohio; J. L. Vance, Ohio; Geo. H. Anderson, Pennsylvania; N. B. Kelly, Pennsylvania; Frank Wenter, Illinois; W. E. Troutman, Illinois; Dr. J. T. Atterbury, Mississippi; R. F. Abbey, Mississippi; R. W. Levy, New York; E. L. Cavanaugh, New York; N. H. Sewall, Alabama; W. L. Slater, California; E. B. Cushing, Texas; L. S. Thorne, Texas; J. S. B. Thompson, Georgia.

At this point the convention adjourned until to-morrow morning, October 28, 1903, at 10 o'clock.

SECOND DAY'S PROCEEDINGS.

The convention met pursuant to adjournment at 10 o'clock a. m., President Scott, Secretary Bryant, and a large membership being present.

Chairman Scott. Gentlemen, there is one man in the Mississippi Valley of colossal mind, of brave heart, and willing hands, whose

name is loved and honored and revered by every man who has fought the great fight and helped to win the great battle of the floods. You will have the pleasure of hearing from him this morning. It is unnecessary for me to add, after what I have said, that the distinguished gentleman is Judge Robert S. Taylor, who will now address you. [Great applause.]

(For the speech of Judge Taylor see p. 80.)

Chairman SCOTT. Gentlemen of the convention, the alluvial basin of the Mississippi River has always been fortunate enough to have in the United States Senate able and distinguished friends. Among them all there is one who has been to us a tower of strength; one who has ever been found where the battle raged fiercest and longest; one who on a recent memorable occasion snatched victory from the jaws of defeat and saved to the alluvial sections the appropriation for the Mississippi River when even its most sanguine friends thought it had been irretrievably lost; a man of heroic mold, morally, intellectually, and physically; one who says in deeds, if not in words—

> How can man die better
> Than fighting fearful odds,
> For the ashes of his fathers
> And the temples of his gods?

[Applause.]

I present to you, gentlemen, the Chevalier Bayard of the United States Senate—the Hon. James H. Berry, Senator from the State of Arkansas. [Applause.]

(For the speech of Senator Berry see p. 91.)

The convention took a recess until the afternoon.

AFTER RECESS.

General CATCHINGS. I desire to submit a report of the committee on resolutions. I desire to say that the committee was in session all morning engaged in the discharge of the duty imposed upon it, and the members were thereby deprived of hearing some very excellent speeches. I will say that all of the States represented here were represented in that committee, and I am sure that the resolutions were satisfactory at least to the members of the committee who were present. Now, with your permission, I will read them.

(For resolutions see p. 1.)

On motion of General Catchings the resolutions were unanimously carried.

General CATCHINGS. Gentlemen, I am directed by the committee to report this further resolution:

"*Resolved*, That it is the sense of this convention that the work of the Interstate Mississippi River Improvement and Levee Association, under the wise and able guidance of its president, Charles Scott, has been of great and lasting value, and its continuance is a matter of vital importance, and that this organization as it exists, with Charles Scott as its president and J. W. Bryant and W. A. Everman as its secretaries, be continued, and that Charles Scott be authorized to appoint three members from each State as members of the executive committee of said association."

Gentlemen, in view of the fact that this resolution refers directly to the chairman, I will take the liberty of putting the question.

The resolution was then put to a vote and unanimously adopted.

President SCOTT. Gentlemen of the convention, permit me to express my sincere and cordial thanks for this evidence of your confidence and esteem. What is the further pleasure of the convention?

Mr. J. N. LUCE. I move that the chair be authorized to appoint a delegation to present these resolutions and a memorial to both Houses of Congress; that the chair take his own time in so doing, making the appointment either before or after the adjournment of the convention, and that he give, as we know he will give, consideration to all recommendations that are made by State delegations or by commercial bodies who are with us in the selection of that delegation. I know of no man who is better fitted to make the selection than our chairman. [Applause.]

The foregoing motion, being duly seconded, was put to the convention and carried unanimously.

President SCOTT. I am requested to state that the undisposed business of the convention is so great that the trolley ride will necessarily be postponed until to-morrow. I am also requested to state that the various levee organizations of the valley will have a meeting to-night in the banquet hall of the St. Charles Hotel. Pardon me—Captain Henry tells me that since I was informed of the programme the levee organizations have concluded that it is best to meet at 3.30 o'clock in one of the rooms provided here for the purpose.

I also desire to state that through the efforts of the very able chairman of the local committee, Hon. J. N. Luce, a number of distinguished statesmen throughout the American Union have been heard from through letters and telegrams on this important subject of the protection of the riparian lands. Captain Bryant has just handed me a list, showing that he has responses from twenty-one governors, and that various Congressmen throughout the country have also responded, and prior to the adjournment of this convention to-morrow these various letters and telegrams will be presented for your consideration.

Gentlemen, with us to-day we have one of the great statesmen and financiers of the country; one who has indelibly impressed his personality and talent on the financial history of America; one who for a time was the trusted and honored friend, and not only so, but a member of the official family of one of the greatest of living American statesmen, Grover Cleveland. [Great applause and hurrahs.] I have the honor, gentlemen, to present to you the honorable Mr. Fairchild, of the great State of New York, who will now address you. [Applause.]

(For the address of Mr. Fairchild, see p. 95.)

Chairman SCOTT. Gentlemen of the convention, the South has many great papers and periodicals in which it can well take a lasting pride. Without intending to make any invidious distinctions, I believe you will all agree with me in saying that among this number one stands prominently forth as a beacon light, one that has labored in and out of season for the development of this beloved Southland. That is the Manufacturers' Record of the city of Baltimore, and I have the honor of introducing to you its distinguished editor, Mr. Richard H. Edmonds, who will now address you. [Applause.]

(For the address of Mr. Edmonds see p. 97.)

President SCOTT. Gentlemen of the convention, I observe in this distinguished audience a cultured scholar, whose researches have extended through all the fields of learning; a genial southern gentle-

man, who has captured all hearts with which he has come in contact; a powerful and adroit debater, whose keen Damascus blade has never known defeat; a great southerner, who is the pride of his section, as he is of his country; the next leader of the great Democratic party in the lower house of Congress—the peerless Mississippian, John Sharp Williams. [Great applause.]

(For the address of Congressman Williams, see p. 105.)

President SCOTT. Pretty much all sections have been heard from before this distinguished audience except the great and growing Northwest. Permit me to introduce to you Mr. George H. Maxwell, a distinguished gentleman from that section, who will now address you on the subject of reservoirs. [Applause.]

(For the address of Mr. Maxwell, see p. 108.)

President SCOTT. One word. A great many members of this convention, I am informed, are exceedingly anxious to leave for their homes to-night. We have received a number of letters and telegrams. Is it the pleasure of the convention that they be read now, or would the convention prefer to take an adjournment until to-morrow morning? It is entirely with you, gentlemen, and I await your pleasure.

Mr. PERCY, of Mississippi. I believe it is the pleasure of the convention to hear them now and get through with our business.

Mr. J. L. VANCE, of Ohio. If the secretary should read an epitome of the communications, will it be possible for us to close the session of the convention this evening?

Chairman SCOTT. Yes, sir.

Mr. VANCE. Then I suggest that that be done.

Which motion being put, the same was unanimously carried.

Secretary BRYANT. I wish first to state, in regard to the attendance at this convention, that we have had actually present duly accredited delegates from 167 cities and municipalities in 24 States, beginning as far east as Massachusetts and going on through the Lake region and as far west as Washington and California.

President SCOTT. Gentlemen of the convention, I am requested to state that the members of the various levee boards will meet to-night at 8 o'clock in the banquet hall of the St. Charles Hotel.

Secretary Bryant then read the letters and telegrams from the following gentlemen:

Governors S. W. T. Lanham, Texas; A. B. White, West Virginia; J. M. Hickey, Nebraska; Jeff Davis, Arkansas; W. S. Durbin, Indiana; J. C. W. Beckham, Kentucky; Richard Yates, Illinois; C. M. Herriod, South Dakota; A. T. Bliss, Michigan; J. K. Toole, Montana; S. R. Vansant, Minnesota; A. M. Dockery, Missouri; S. R. Pennypacker, Pennsylvania; Henry McBride, Washington; J. H. Peabody, Colorado; J. M. Terrell, Georgia; J. B. Frazier, Tennessee; A. B. Cummins, Iowa.

Senators James B. McCreary, Kentucky; Wm. J. Stone, Missouri; Porter J. McCumber, North Dakota; A. J. McLaurin, Mississippi; H. D. Money, Mississippi; Wm. P. Frye, Maine; S. B. Elkins, West Virginia; Geo. C. Perkins, California; W. A. Clark, Montana; Chauncey M. Depew, New York; T. C. Platt, New York; W. B. Allison, Iowa; M. S. Quay, Pennsylvania; J. H. Mitchell, Oregon.

Congressmen W. M. Howard, W. G. Brantley, Georgia; C. F. Scott, P. P. Campbell, Kansas; J. W. Bordney, Alfred Lucking, H. L. Haineton, Michigan; Richard Bartholdt, W. D. Vandiver, J. T. Hunt,

Missouri; Swayer Sherley, A. O. Stanley, Kentucky; A. F. McLain, E. J. Bowers, Thomas Spight, E. S. Candler, Mississppi; H. P. Goebel, W. W. Skides, A. H. Jackson, J. W. Cassingham, G. W. Nepp, I. S. Snark, C. H. Grosvenor, Ohio; Gordon Russell, A. W. Grigg, J. L. Slayden, W. R. Smith, Texas; R. F. Broussard, A. P. Pujo, Louisiana; Thomas Hedge, W. J. Wade, B. P. Birdsall, Iowa; W. O. Smith, James W. Brown, S. R. Dresser, J. H. Shull, H. Burt Cassett, A. L. Bates, Edw. Morrell, G. R. Patterson, Pennsylvania; E. F. Henson, North Carolina; W. L. Jones, Washington, J. N. Williamson, Oregon; J. J. Esee, J. H. Davidson, J. J. Jenkins, J. W. Babcock, Wisconsin; F. W. Mandell, Wyoming; C. R. Davis, H. Steenerson, Minnesota; W. S. Greene, Massachusetts; R. R. Hitt, B. F. Caldwell, W. A. Rodenburg, George W. Smith, Illinois; J. C. T. Robbins, J. S. Little, S. Brundidge, R. B. Mason, Minor Wallace, Arkansas; S. J. Bowie, G. W. Taylor, J. H. Bankhead, William Richardson, Alabama; L. P. Padgett, T. W. Sims, R. A. Pierce, J. A. Moon, Tennessee; Theo. A. Bell, Connecticut; F. E. Brooks, Colorado; A. L. Allen, Maine; Joseph Howell, Utah; Paris Gibson, Montana; N. P. Otis, New York.

Chairman SCOTT. Permit me to say, gentlemen, that the success of this great levee convention, the greatest in the history of the Mississippi Valley, is largely due to the untiring and intelligent efforts of Hon. J. N. Luce, chairman of our local committee, and Mr. John M. Parker, of this city. These efforts have been greatly assisted by the press throughout the country, and especially by the New Orleans press, and if I might be permitted to make the suggestion, I think it would be graceful and proper for some member of the convention to move a vote of thanks.

Mr. J. N. LUCE. I make one suggestion. In addition to Mr. Parker, I had the very able and energetic assistance of Captain Bryant and Mr. Lafaye on our local committee; in fact, I think a vote of thanks should go to the whole committee.

Mr. J. L. VANCE, of Ohio. You anticipated me by a minute or two in those remarks. I know our thanks are due to the gentlemen named by the president. He has, however, omitted himself from that list; and I now move that the thanks of the association be tendered to President Scott, Secretary Bryant, Mr. Luce, Mr. Parker, the chairman of the executive committee and the chairman of the other committees connected with this organization, and particularly to the members of the press, who have so well reported our proceedings.

Which motion being put, was carried unanimously.

A resolution was adopted of thanks to Capt. Patrick Henry for his able and successful service in Washington as representative of the Interstate Mississippi River Improvement and Levee Association.

A MEMBER. I now move that we adjourn sine die.

Mr. VANCE. Before putting that motion I want to move additionally that the thanks of the convention be tendered to your board of trade, the cotton exchange, the street-railway system, and the other commercial and industrial bodies of this city, and the citizens generally, for the hospitality with which they have received us.

The motion to adjourn being temporarily withdrawn, the motion of Mr. Vance was carried unanimously. The convention then adjourned sine die.

President Charles Scott's Opening Address.

I have ventured, my fellow-citizens, to call together this parliament of distinguished men in the interest of the world's greatest valley. The governor of Louisiana has been prompt to supplement and sanction this call by his official proclamation—a broad and public-spirited act, which has been and is now the subject of universal commendation. It was justified, and more than justified, I might say, by the vast and varied interests at stake, because at last it is generally conceded, I believe, that the reclamation and the protection of the alluvial lands of the Mississippi Valley from the drainage waters of 32 States and Territories is a matter of great national importance.

NATIONAL SYSTEM OF MASSIVE DIKES.

How can this be done? By whom and when? These are some of the momentous questions that will demand and receive your careful and dispassionate consideration. Speaking not for myself alone, but for the association over which I have the honor to preside, and voicing, if you please, the unalterable sentiment of millions of American citizens, I do not hesitate to say that this protection can come only from a national system of massive dikes. [Great applause.]

This, I am aware, is a bold and pregnant statement, but it is fully sanctioned by the past history of levee building throughout the ages. Not only so—local conditions and local experience sanction and sustain every syllable of it as a potent and faithful verity.

How else, pray, can the fecund fields and the giant forests of this imperial valley be protected from inundation? If we may not depend upon the levee system for protection, upon what can we depend? I am fully aware of the fact that our friends, the "outletters" (if I may be permitted to coin an awkward word or phrase), are always with us. They always have been with us, and I guess they will be to the end.

A SYSTEM OF OUTLETS.

They still point with some degree of pride and confidence to a system of outlets as a panacea upon which we can safely rely. Their past exponent and great high priest in the lower valley, Capt. John Cowden, was for many years, I believe, a respected resident of this city. An honest man, a fiery enthusiast, firmly convinced and wholly possessed by his favorite theory, he, like a second Peter the Hermit, preached it far and wide. We can not marvel, then, if for a time it had some effect on Congressional and, I may say, on public sentiment. Why, gentlemen, in 1890, when the great levee convention met in the historic city of Vicksburg this association, you will remember, was organized. We then sent a delegation of some twenty or twenty-five prominent citizens of the valley, from Louisiana and all the other riparian States, on to the national capital. When they arrived there they found that Captain John was almost the master of the situation. He actually had possession of one of the committee rooms of the United States Senate, and his maps and charts were on the walls and all over the tables. But his theory could not bear the test of close and impartial investigation. It was fallacious. And my observation, gentlemen, has been that, sooner or later, every fraud—I do not intend

to use that word in a disagreeable or unpleasant sense—so let us say every fallacy in this world, when properly attacked, must fail and fall to the ground. It was no new theory, this of outlets. Eminent hydrographers had tried it long and merry ago.

It is my pleasure to notice in this distinguished assemblage Maj. B. M. Harrod [applause] and other eminent engineers of international reputation. I am sure that they will sustain fully the statement that I have just made about the outlets. They will not only do that, but they could go further and tell you that the system of outlets had not only been tried, but that it had been discarded years ago by distinguished Italian and other hydrological engineers. We read in a treatise by the great Gennitè about a system of outlets in connection with the river Adige. He tells us that they served, as they will always do in silt-bearing streams, to cause a shoaling or raising of the bed of the river, which greatly added, as he says, to the danger of floods. So, too, the great Paolo Frisi did not hesitate to denounce outlets in no uncertain terms. They were also tried, I may say ad nauseum, by Vincent Viviani in the river Celone, only to result in filling up, or partially filling up, the bed of that stream; and the fact is this went to such an extent that the main trunk of that small but useful river was entirely closed.

Going still further back, if you please, we read in one of Pliny's classical letters that outlets were largely experimented with under the orders of the wise and humane Emperor Nerva. Again they proved wanting, and were finally discarded because they utterly failed to prevent the inundation of the adjacent territory.

TASK FOR A PRACTICAL PEOPLE.

But we Americans are a practical people, and I imagine that some of you are thinking that this is all "ancient history"—that you would rather know something about the present authorities on the subject, and especially the American authorities. What about local conditions, and what about a system of outlets as applied to the régime of the great Father of Waters? Well, it has always been my observation, gentlemen, that like causes may be relied upon to produce like effects—modified or enhanced, of course, by the occasional peculiarities of environment. So it is, my fellow-citizens, if we do not to-day find a consensus of opinion, we do find an overwhelming preponderance of scientific opinion firmly and unalterably opposed to the theory of outlets. And why? Why should these eminent gentlemen of the Mississippi River Commission, who enjoy now, let me say en passant, as they have always enjoyed, the full confidence of the people of this great valley [applause]—why should they and the able and practical engineers in charge of these vital interests throughout the alluvial section be opposed to outlets? They can surely have no ulterior object; surely they are not wedded to the system of levees per se. What they want, and what you and I want, gentlemen, is perfect and permanent protection from inundation—nothing more and nothing less. We all oppose the system of outlets, then, simply because it does not give and it can not give the necessary protection. Utterly failing to relieve the congestion of waters, outlets have the opposite effect. They cause, or tend to cause, as was said, I believe, by Major Harrod in a very able paper presented not long ago to the American

Society of Engineers, a shoaling or filling up of the bed of the Mississippi River, just exactly, gentlemen, as Gennitè tells us they caused a shoaling years ago in the bed of the Adige.

It could not be otherwise. The Mississippi, as you well know, is the largest of all silt-bearing rivers. Its waters are heavily charged with sediment brought down by all the "arrowy streams," if I may borrow a phrase from a great Mississippian now passed away, the beloved and knightly William A. Percy [applause], as they descend from the mountains on either side. When this sediment finally reaches the main trunk of the river it is greatly supplemented by the silt from the caving and the erosion of the ever changing and shifting banks of this mighty stream. So long as we confine the river in a single channel you will understand, of course, that its power is conserved and a uniform flow of its waters measurably maintained, except, of course, in isolated cases. Now, under these conditions, gentlemen, this great river can perform its normal functions as intended by Mother Nature. In other words, it can carry its burden of silt, imposed upon it by an all-wise Providence, until finally it is safely deposited in the waters of the Gulf. Let us suppose, however, that any very large derivation or outlet is made, and what will be, ex necessitate, the effect? Don't you see it is tantamount to dividing the river? You will understand, then, that you subtract thereby just as much from its carrying capacity. The old stream grows indignant, perhaps; at any rate, it becomes unable to properly perform the functions that nature intended, and the silt instantly commences to be deposited. The upbuilding of the river bed will follow, and this, if continued from year to year, will in the long run seriously interfere with the navigation of the stream, and may lead to even more serious consequences. It might tend indeed to render the alluvial basins of the lower valley altogether unfit for inhabitance. This grave danger, my fellow citizens, warns us to let the mighty river flow on, as the great Lincoln said, "unfretted to the sea."

ORIGIN OF THE GREAT FLOODS.

Another thing. All of you are thoroughly acquainted with the topography of the lower valley and know full well, therefore, that any important system of outlets is impracticable until you pass to the southward of the Red River. Where do the floods come from? They come from the north. The "big waters" are usually caused by the simultaneous outpouring of the Ohio, the upper Mississippi, and the Missouri. These waters become congested in the main trunk of the river, and as they pass south of Cairo, the capacity of the channel being overcharged, they commence to spill over on either side into the alluvial basins. It follows, necessarily, that a vast area of alluvial lands would be inundated for days, a great deal of it for many days, before the descending floods ever approach the zone of influence of any system of outlets situate so far to the south.

Now, this whole question, as my friends, Judge Blanchard and General Catchings (both of whom are with us to-day) will tell you, received the attention of the National Congress some years ago. The Committee of Commerce of the United States Senate, then composed, as is nearly always the case, of some of the most eminent men in the nation, gave the subject exhaustive and painstaking study.

The result of their labors on this and cognate matters will be found embodied in an able report to the Fifty-fifth Congress, and I will ask you to permit me to read briefly what this committee has had to say on this important and interesting subject. I refer to my notes; here is the language of the committee:

"Neither can your committee discover from the evidence or through other sources any material relief from the outlet system. It is not practicable to relieve the river by means of outlets, except below the Red River. Two important outlets now exist, and have for years existed on this reach of the river—the Atchafalaya and Bayou Lafourche. A third, Bayou Plaquemine, is now closed, pending its preparation for reopening by means of locks and dams. But these outlets, or others that might be constructed on this reach of the river, could afford no perceptible relief for the river above, where relief is much more called for and needed. The St. Francis, Yazoo, White, and Tensas basins can get no relief from any practicable outlet system. And where this system exists and is feasible, there is no disposition to extend it or to substitute it for levee enlargement."

THE RESERVOIRS.

So much, then, for the outlets. But there is another supposed plan of salvation generously offered to you sinners—I beg your pardon; I should say you dwellers of the valley. I allude, of course, to the reservoir. These, like the outlets, can by no means be included in any correct list of modern innovations. The fact is that they are older than the days of the patriarch Joseph. We read that immense reservoirs were constructed in China, India, and elsewhere in the Orient, while our European forefathers were still howling barbarians (if I am not too disrespectful to our distant and dear departed ancestors), scantily clad in furs and content to make their habitations in hollow trees or secluded caves. We still find traces of one of these immense structures, the Poolari reservoir, whose walls are said to have extended over 30 miles in length, and whose waters, when bank full, as some writers tell us, were capable of irrigating or inundating over 60 square miles—something almost incredible.

No such stupendous works are attempted by our modern engineers. The very largest reservoir that has been built, so far as I know, in our day and generation, is the great Nile Dam at Assouan, constructed, as you will remember, under the auspices of the British Government at a cost equal to about $12,500,000 in American money. But even this is a small affair as compared with the ancient structures I have just mentioned. Still it is a noble work, in which our English cousins may well take pride. It was finished in 1902 and was dedicated, I believe, in December of that year by the Egyptian Khedive with great pomp and ceremony. It will interest you, perhaps, to briefly notice some of its salient features. However that may be, it is proper, in order to bring out the point that I now desire to present for your consideration, that I should call your attention to its dimensions and capacity.

You will pardon me again if I refer to my notes. I am indebted for these data to a very interesting and instructive article by Penfield that appeared not many months ago in the North American Review. I quote from his article:

"In an official report by Earl Comer, the British diplomatic agent in Egypt, it has been stated that the actual cost of the Assouan dam is

about $12,500,000, and that it will increase the earning capacity of Egypt by $13,000,000 annually. The reservoir will permit the additional irrigation of 1,600,000 acres, and will bring an additional revenue annually to the Egyptian government in taxes of $1,900,000, and indirectly more."

You will observe a little later on, gentlemen, that what our English friends consider to be a very good investment is a mere bagatelle as compared with the benefits to our nation of the reclamation of this great alluvial basin. [Applause.] I further quote from Mr. Penfield's article:

"The dam is straight from end to end, and is 1¼ miles long. Its thickness at its deepest part is 82 feet, tapering to 23 feet at the top, which is finished as a roadway. Its height from the lowest part of the foundation to the coping is 131 feet. The maximum 'head' of the impounded water is 65 feet, and the dam, when full, is calculated to contain, according to Sir Benjamin Baker, its chief engineer, 234,300,000,000 gallons of water, weighing practically 1,000,000,000 tons."

Verily, gentlemen, a marvelous and stupendous structure! But if we should attempt to use the great Assouan dam or one like it in any effort to control the turbulent waters of our great inland sea it would prove a mere bauble, a child's plaything, something akin to the mud walls or dams that you and I constructed—shall I say only a few brief years ago?—in the early days of our childhood. How many dams equal to that at Assouan do you think would be required to have any appreciable effect on the floods when there is a great rampage in "the old Mississip," if you will pardon me for dropping, not as Mr. Wegg did, into poetry, but into the local vernacular? How many dams equal to that stupendous work would be required, I ask, to have an appreciable effect on one of our real "big waters"—a water, let us say, like that of 1897? You will be astounded and perhaps startled when I tell you that it would require not less than forty of them. Here are the figures.

A UNITED STATES ENGINEER'S REPORT.

These data were kindly prepared at my request by that genial gentleman, talented engineer, and superb officer of the United States Army, Capt. Charles L. Potter, who for several years was in close touch with important Mississippi River work. I can do no better than read you his letter. I know statistics are rather dry, but you will understand that we are not talking here altogether for "buncombe," if you will pardon the expression. These proceedings will be published and will go out all over the country; so Captain Potter's figures in this connection would perhaps be more decisive on the question of reservoirs than anything I could say if I were to talk for an hour. Here is his letter:

[River and harbor improvements on Lake Superior. Portage Lake ship canals.]

UNITED STATES ENGINEER OFFICE,
Duluth, Minn., October 6, 1903.

DEAR SIR: Answering your letter of the 28th ultimo, I would say that I have no records of the water in 1903, and those of the great flood in 1883 are probably not as reliable as those of 1897, so I have.

taken the high water of 1897 to work upon. This flood reached 51.6 at Cairo, while that of 1883 reached 52.2, so my figures are somewhat small for the highest flood, that of 1883.

You ask for the data at Cairo. The observations for discharge are taken at Columbus, Ky., about 21 miles below Cairo; but as no tributaries enter in this distance the discharge observations are practically good for Cairo.

It is a point of low-gauge reading, however (the maximum for 1897 being 45.08, while Cairo went to 51.6), so I also give you the data for Helena, Ark., where the gauge went to 51.75, in addition to that for Columbus.

At Columbus, Ky.—The discharge for a bank-full stage was 1,303,536 cubic feet per second, or 586,591,200 gallons per minute.

The discharge at extreme high water (estimated from the highest gauge at which observations for discharge were made) was 1,675,173 cubic feet per second, or 753,827,880 gallons per minute.

The difference between bank-full discharge and high-water discharge was 371,637 cubic feet per second, or 167,236,680 gallons per minute.

The discharge corresponding to the last foot on the gauge of the amount necessary to draw off to lower the flood plane 1 foot at this point was 128,859 cubic feet per second, or 57,986,580 gallons per minute.

With a reservoir holding 234,300,000,000 gallons it would take the excess of the highest discharge over bank-full discharge one thousand four hundred and one minutes, or twenty-three hours twenty-one minutes, or practically one day, to fill this reservoir, i. e., one such reservoir would be required for each day that the gauge was at 45 feet.

To reduce a flood of this magnitude 1 foot would require one reservoir of the size mentioned for each four thousand and forty minutes (sixty-seven hours twenty minutes, or two days nineteen hours and twenty minutes; say, two and three-quarters days) of the time the river was at this stage.

The hydrographs show at Columbus, Ky., for the high water of 1897:

	Days.
River above bank-full stage	47
River above 42-foot stage	44
River above 43-foot stage	39
River above 44-foot stage	28
River at 45-foot stage, high water	7

To store the water of this flood above a bank-full stage (6,450,000,000,000 gallons) would have required 28 reservoirs of the size mentioned above, or one reservoir 55½ miles square (3,080 square miles) and 10 feet deep.

At Helena, Ark.—The discharge at a bank-full stage was 1,153,846 cubic feet per second, or 519,830,700 gallons per minute. The discharge at extreme high water (estimated from the highest gauge at which observations for discharge were made) was 1,713,992 cubic feet per second, or 771,294,000 gallons per minute.

The discharge corresponding to the last foot on the gauge, or the amount necessary to draw off in order to lower the flood plane one foot at this point, was 84,576 cubic feet per second, or 38,059,200 gallons per minute.

The difference between bank-full discharge and high-water discharge was 560,146 cubic feet per second, or 252,065,700 gallons per minute. With a reservoir holding 234,300,000,000 gallons it would take the excess of the highest discharge over bank-full discharge 932 minutes, or 15 hours and 32 minutes, or practically two-thirds of one day, to fill the reservoir, i, e., three such reservoirs would be required for each two days that the gauge was at 51¾ feet. To reduce a flood of this magnitude 1 foot would require one reservoir of the size mentioned for each 6,156 minutes (102 hours and 36 minutes, or 4¼ days) of the time the river was at this stage.

The hydrographs show at Helena, Ark., for the high water of 1897:

	Days.
River above bank-full stage	56
River above 45 feet	46
River above 46 feet	41
River above 47 feet	28
River above 48 feet	25
River above 49 feet	15
River above 50 feet	8
River at 51¾ feet	1

But for the fact that several crevasses occurred in a short distance from Helena, this gauge would have gone some higher and would have remained near the high point much longer.

To store the water of this flood above a bank-full stage (9,475,600,000,000 gallons) would have required 40 reservoirs of the size mentioned above, or one reservoir 67⅓ miles square (4,532 square miles) and 10 feet deep.

It will thus be seen that to hold the flood down to bank-full stage at Helena would require reservoirs at some point above with a depth of 10 feet and an area of 4,532 square miles, or 2,900,480 acres, which at a value of $10 per acre (it is not believed that large bodies of delta land could be had anything like as cheap) would cost $29,000,000 for the land alone.

Holding the river down to a bank-full stage at Helena would still cause an overflow of a great part of the third district, as the banks are naturally lower, and water entering low places would overflow much of the land back from the river, where it is considerably lower than at the river banks.

Trusting that this will give you the information you desire, I am,

Very respectfully,

CHAS. L. POTTER,
Captain, Corps of Engineers.

Mr. CHAS. SCOTT, *Rosedale, Miss.*

Now, gentlemen, suppose we assume that from an engineering standpoint it is practicable to construct anywhere in the Mississippi Valley an immense work forty times as large as the great Nile dam, and suppose we further assume that this could be done at a like cost per cubic yard. You will observe that this would represent the gigantic sum of $500,000,000. Add to that the cost of the lands where this great structure would be situate, and we have the stupendous figure for a reservoir that would not give us any adequate relief of $529,000,000.

These figures are prohibitive. It would seem, then, almost useless to discuss the practicability of a work of this kind from other standpoints—the great difficulty of obtaining "holding grounds," as they

are sometimes called, for a titanic work of these proportions; the long period of time, year after year, that would be required for its completion; the great danger of impounding a stupendous mass of water weighing 40,000,000,000 tons here in our midst, a deadly and insidious foe, ever ready, night and day, to undermine or to break through or to leap over its barriers in a mad rush to the distant sea. And, above all, consider the grave criminality that would be involved in such an effort. I am sure you will all remember within the past month the giving away of some great reservoirs (the exact locality I don't remember, but it was near the Atlantic seaboard), sweeping many lives out of existence and carrying away millions of dollars invested in public and private property.

Think what would be the result if a similar disaster should occur to a vast work forty times as large as the great Nile dam situated at any point that your imagination may suggest in the Mississippi Valley, destined before many years to be not only the garden spot of the nation, but its great center of population. The imagination recoils from such a heartrending picture. No, gentlemen; no! Reservoirs are impossible. They have been so pronounced by the eminent gentlemen of the Mississippi River Commission, I think. I know they have been so pronounced by the Committee on Commerce of the United States Senate, from whose report I just quoted, as well as by almost every practical engineer of whom I have ever heard. En passant, I will say Mr. Haupt, the consulting engineer, of Philadelphia, who is a very forceful and learned writer, takes issue with me, I understand; but Mr. Haupt has never been in practical touch with the great river, whereas every eminent engineer that I know of who has come in personal contact with the mighty forces of this majestic southern and western stream has pronounced the system of reservoirs utterly unfeasible and impossible.

But I see in this distinguished audience some influential gentlemen from the golden grain fields of the great and growing Northwest who may resent this statement. Let me say right here if they need reservoirs to irrigate and fructify their fields or to reclaim their arid lands, that is altogether a different question. In the name of that modern gospel, which should animate and control every progressive American citizen, when it commands him to cause the waste places to blossom like the rose and to make two blades of grass grow where there was only one before, let us stand shoulder to shoulder with them and help them to get national appropriations in the prosecution of their beneficent work. [Applause.]

But when you come to any intelligent scheme for controlling this mighty river reservoirs will not answer the purpose. In other words, if you will pardon a slang expression, I will say in language more forceful than elegant, we have no use for reservoirs "in our business." [Applause.]

A NATIONAL SYSTEM OF LEVEES.

Now, then, seeing that outlets are not only impracticable, but harmful, and that reservoirs are impossible, can you marvel that the dwellers of the valley cry out as with one voice for a national system of levees whose impregnable walls shall extend all the way from Cairo to the Head of Passes? This, and this alone, it is my firm and honest

conviction, can give perfect and permanent protection to that vast area of fertile lands whose development only awaits the magic touch of Nature's nobleman, the planter and farmer—he who Emerson tells us, as the creator, the producer, the maker of things, stands always "nearest to God." But the planter and the farmer, gentlemen, can do nothing until you give him protection, and the more you look into the subject the more firmly convinced you will become that the levees are the new way and the old way and the only way of protecting any extended valley from inundation. [Applause.]

Here, again, we have been anticipated by those of the olden times, for we read that levees were in use two thousand years, and perhaps more, before the coming of the Christ. Did it ever occur to you (it does sometimes to me), in spite of what I may call the intellectual arrogance of the twentieth century, that, after all, "there is nothing new under the sun?" The shifting sands which have buried the glories of Babylon and Nineveh for centuries past hide from us, I doubt not, mighty engineering and other secrets we fain would know. Still other sands, it may be, held within their silent embrace ages before these proud cities reared their heads a higher civilization than has ever been revealed to them or to us. However this may be, history tells us in no uncertain tone that the great and wise Queen Semiramis, while dazzling and fascinating the Assyrian courtiers with her majestic beauty and the radiant luster of her wondrous eyes, still found time to protect with a perfect system of dikes the homes and fields of her loyal subjects from the rebellious waters of the Tigris and the Euphrates, forever chafing within their shores. Many others have followed (as we all like to follow a charming lady) her laudable example. As the sciences and arts extended their benign influences from the Orient westward over the continent of Europe we find that levees were there used as the safer, if not the only, means for the protection of alluvial basins. Indeed, I do not now recall a stream of any great magnitude in any part of the world whose floods are controlled otherwise than by a system of dikes. This fact alone is a suggestive if not a conclusive one.

Let us, in this connection, consider for a moment that veritable child of the rivers and the sea, the plucky and indomitable little Kingdom of Holland. She completed, I believe, her original system of dikes in 1825. But we read that as late as 1833 (I am not good at figures, and you will pardon me while I refer to my notes) the whole of the Netherlands only contained 5,611,860 acres of land. By that time they had proved the dikes, and therefore they were extended from year to year until, according to the Cadastral survey of 1877, they had increased their area to 8,148,020 acres. In other words, this courageous and remarkable people, laboring under many difficulties, inhabiting a little kingdom which, figuratively speaking, one of these fair ladies in the balcony could cover with her cambric handkerchief, had created and actually rescued from the sea 2,536,160 acres of land, worth $1,268,080,000, at a cost equal to $61,000,000 in American money.

This is a most remarkable record, but it was not made in a day. Neither was their original system of dikes the work of a day. Quite the contrary. It represented years of arduous toil, and during this period of transition our indomitable Dutch friends underwent the same hard experience that many of you here in this audience have undergone when, with hipboots and high-water paraphernalia, you boldly

waded out in the "overflow" to save some stubborn old mule or refractory old cow from a watery grave. [Laughter and applause.] There were in that period from 1702 up to 1825, we are told, disastrous crevasses that occurred on an average of once in every eleven years, carrying death and destruction throughout a large part of the Netherlands. During all this trying ordeal the Dutch toilers had with them another thing which I dare say they didn't want. They had to contend, just as we have had to contend, with a numerous swarm of critics and croakers, who sounded their discordant notes far and wide while

> Flapping from out their condor wings
> Invisible woe.

Happily, however, the goal was at last reached. The dikes were built to the ultimate grade; the system was made perfect. And mark you, gentlemen, from that good hour in 1825 up to the present time Holland has been practically immune against the floods, and her argosies are now on every sea, while her treasures are in every land. Now, if you won't say anything about it I will tell you a little secret as to how I know about these treasures. I know because some Dutchman with an unpronounceable name has a big mortgage on one of my plantations [laughter], but when Uncle Sam perfects, as he intends to do, our system of dikes, I will get even by lending my Dutch friend some money and taking a mortgage on his [laughter and applause], unless, indeed, it is only a prospective plantation, still covered by the waters of the Zuyder Zee. [Laughter.]

LONG STRIDES IN THE RIGHT DIRECTION.

Now, gentlemen, what the Dutch have done we can do. The fact is, we have already done so. Perhaps that statement is a little too broad, and it may be, in my enthusiasm, like the old darkey my friend, Ben Humphreys, tells about, "I overspoke myself." [Laughter.] But I will leave Congressman Humphreys to tell you that amusing and instructive anecdote when you adjourn to mix your Mississippi River water with something decidedly more palatable.

Meanwhile I am going to qualify my statement and bring myself strictly down to the facts and figures. These will show that we have made long strides in the right direction. The statistics which I will submit in a few minutes (don't be alarmed; they are not very long) will demonstrate this to your satisfaction. They were kindly furnished at my request by the very able and obliging chief engineer of the board of Mississippi levee commissioners, Capt. C. H. West. Let me premise, however, by stating what is also "ancient history" to many of you, that prior to the enormous flood of 1882 the General Government had extended no assistance, financial or otherwise, in the construction or maintenance of our system of dikes. The first levee ever built in the Mississippi Valley was constructed along the front of this city, now the metropolis of the South, but then a mere village, by the great Frenchman Bienville. Thereafter the system was gradually extended, but it was entirely dependent upon the local organizations, with the help of some of the lower riparian States. The result was that when we came in contact with the immense and ever memorable flood of 1882, that hurled itself against our bulwarks like an invincible army, we found our levees weak and altogether ineffectual. Since then, however, millions of dollars have been spent in its better-

ment by the General Government and by these same local and State authorities, always working together in perfect harmony. Now, mark you, here is the point I want to make—the figures furnished by Captain West prove that the crevasses steadily decreased in proportion as the levee system was perfected. They show that—

	Crevasses.
In 1882 there were	282
In 1897	38
In 1903 only	7

Now, let us notice the mileage of levees affected by the floods: In 1882 the floods swept away 54 miles of dikes; in 1897, 8.7 miles of dikes; in 1903, only 2.5 miles of levee injured.

These figures speak eloquently—may I not say conclusively—in favor of the levees. They prove, as the statistics in Holland prove, that whenever and wherever a system of dikes is built to the ultimate grade, under the direction of watchful and competent engineers, it can be relied upon for perfect, practical, and permanent protection from the onslaughts of the floods. [Applause.] I grant you that here and there weak places may devolop, because no human work can be made absolutely and altogether perfect; we all know that; but if at long intervals an accident should occur the damage will be circumscribed within very narrow limits, and when engineering methods improve, as they will do, it would be speedily controlled. In the meantime any general disaster such as that which has swept over parts of the alluvial basins in former years will be absolutely impossible.

Now, gentlemen, this brings us to two exceedingly delicate and important questions. First, what will be the additional cost of bringing the entire line of levees up to ultimate grade? And, second, by whom should this expense be borne? I was informed on yesterday that the report of the Mississippi River Commission for the present year had not gone to press. I shall assume, however, that there will be no material change in that report from the one issued by that influential and eminent body in 1902, except, of course, to add the additional outlay that has been made in the betterment of the system during the past twelve months. According to the report made by the Commission last year, the material then contained in the levees amounted in the aggregate to 167,236,540 cubic yards. They estimated that it would require, to bring the entire line of levees up to the ultimate grade, 94,054,488 additional cubic yards, which they said would cost $18,810,897.60. I am unable to say, as I have not had the advantage of seeing this year's report, what has been the total sum expended on the levees within the past twelve months. It is a large amount, I am sure, and I will add that the system has been vastly improved. Suppose, however, that we discard that from our consideration, and, in order to provide for every possible contingency, let us assume that it will cost additionally to perfect the system of dikes from Cairo to the Head of Passes $20,000,000.

This, from one viewpoint, is a great sum, but if the Government should undertake the work the additional revenue derived directly and indirectly from the increased products and the increased purchasing power of the valley people would soon pay back the principal with an enormous rate of interest. However that may be, all are agreed that this work of supreme importance should be done. It must be done.

And I will ask you, gentlemen, to determine in your wisdom who shall bear the expense. Upon whom devolves the sacred duty of protecting the countless homes and the billions of dollars of American capital here invested from the aggressive waters of this mighty river? Can it be possible that Thomas Jefferson, perhaps the greatest of American statesmen, as he was undoubtedly the most versatile—can it be possible that he violated the Constitution of his country as he construed the instrument—righteously violated it in the acquisition of this royal domain from the French emperor that a large part of it might be left forever and a day in a state of nature; that its future inhabitants, the noble and big-hearted men and women who have now collected here, should be left to the mercy of the waves? Never. Strict constructionist as he was, Jefferson would have devised some plan to have saved the nation from this grievous wrong—some means to have given to the country and the world the many advantages that would come from the improvement of this immense territory.

Look at this large and handsome map. The contour is not as clearly marked as it might have been by the red lines; still you can here see the vast and fertile domain which a great American orator (I believe it was Rufus Choate the elder) defined some years ago in his eloquent and impressive way as "the imperial valley of the Mississippi." The distinguished New Yorkers who have honored us with their presence will observe that it embraces a considerable part of their far-distant State. Taking that as a coign of vantage, and glancing toward the setting sun, you see it extends mile on mile and league on league until its western boundary is lost to view in the gorgeous coloring and the barbaric splendors of the Grand Canyon of the Yellowstone.

Think of it, gentlemen, in all of its majestic proportions. No less than thirty-two States and Territories, or parts thereof, are within the confines of this marvelous valley. They represent an area of 1,240,050 square miles. This is about 41 per cent (leaving out of consideration Alaska and the isles of the sea) of the whole area of the United States. These fertile lands, divided here and there by countless streams, with perhaps 25,000 miles of navigable waters, are owned and possessed by no less than 35,000,000 American people. Their forests and their hillsides and their valleys are in numbers as the stars of the firmament or the sands of the seashore. As all these forests are felled, and as the drainage of all these hillsides and valleys shall become improved, they will hurry southward the mad flow and the whirling and "the rushing of the mighty waters." We can almost hear them now! They sound in our affrighted ears as the ocean sounds when, in the language of the gospel, "deep calleth unto deep with the voice of Thy waterspouts; Thy waves and Thy billows have passed over me."

THE DRAINAGE OF A STUPENDOUS AREA.

Where do they go, these stupendous waters, representing the drainage of 41 per cent of our common country? Where do they go, I ask, in their onward rush to the sea? Do you realize, gentlemen, that every single drop of water that falls or flows on or over this vast area must past, and does pass, by the very doors of this hospitable city? Do you understand and realize that in all of its great significance? If so, gentlemen, you also realize, perhaps as you never did before, that the profound and aggressive intellect of the New England states-

man, James G. Blaine, struck straight to the heart of this important subject when he defined the Mississippi River as "the nation's greatest sewer." [Applause.]

Who, then, shall provide for and take care of this sewer, the nation's sewer? That is the question. Upon whom devolves the sacred duty of doing that? Will the American people confess to a lack of humanity—and, without intending to be harsh, I might almost say a lack of common decency—by permitting their sewer, the nation's sewer, to overwhelm the people and the property of the lower valley? Never; I will not believe it. [Applause.]

It has now been something like thirty-eight years ago since, a mere youth, I fought as best I could beneath the stars and bars for what I believed to be the right. Thank God I have never since seen the time or the place when I was ashamed of it or when I apologized for it or when I regretted it. [Great applause.] I don't know how it may be with other Southerners, but as for my single self—

In Dixie land I'll take my stand,
I'll live and die in Dixie.

[Great applause.]

Now, I wouldn't have any of our Northern friends who have honored us with their presence to think for a moment that they have come in contact with a 1903 freak—an "unreconstructed" man. Such is far from the case. Since the hour when the great silent captain, Ulysses S. Grant, said "Let there be peace," the whole South has accepted with the utmost good faith the arbitrament of the sword. [Great applause.] And so, as it now stands, there is no man within the confines of our common country more willing than I, if need be, to fight to the last beneath the time-honored and invincible folds of Old Glory. [Applause.] If need be, I stand ready to help carry the Stars and Stripes, as I would have carried the stars and bars, to the isles of the sea—yea, to the uttermost parts of the earth. [Applause.] But, gentlemen, if I could for a moment suppose that our common country would be so derelict in its duty as to permanently neglect these big-hearted, noble, and chivalrous men and women who have cast their fortunes in this alluvial basin, I must say that I would no longer feel as I do to-day. I could no longer feel, as an American citizen should feel, that intense pride and love of country such as prompted the humblest soldier in Cæsar's legions to say "I, too, am a Roman citizen."

NO DANGER OF PERMANENT NEGLECT.

But there is no danger of our being permanently neglected by the National Government. I am a firm believer in the ultimate triumph of the right. Besides, I have an abiding faith and confidence in the American people. I feel, then, that in good time the General Government will come to our relief. There will, no doubt, be more or less of opposition. There always is. Some of our Republican friends will vote against legislation of this sort "because its benefits would be local and partial." At the same time some of our beloved Democratic fossils, who don't yet know, perhaps, that General Jackson is dead, will oppose these same appropriations because, forsooth, they are altogether unconstitutional. [Laughter.] From both, gentlemen, let us appeal to Cæsar, that is, to the great body of the American people through their accredited agents in the national Congress. You need

not fear that they will be led any longer by the reactionaries and obstructionists. The Republicans in Congress will be under the leadership of broad and liberal men, and as for the Democrats, they will be led by that peerless parliamentarian and Mississippian, John Sharp Williams. [Great applause.]

We live in a practical and utilitarian age. I expect, then, all parties will silently agree with Thomas Jefferson, who thought when he made the Louisiana purchase that if he or Congress did a good thing the American people had sense enough to know it and to approve of it. Of one thing rest assured, the country will not continue to spend millions of dollars to develop the arid West unless they extend equal privileges to the devoted and loyal South. [Applause.] So, I say, the members of Congress will not follow the obstructionists. They will rather lend their attention to the advice and utterances of that great and good man and eminent American patriot, Abraham Lincoln. [Applause.] In his plain, straightforward, and common-sense way he has not only answered, but has utterly "smashed" and demolished the two arguments that I have alluded to, and which perhaps would be the most common, if not the most potent weapons in the hands of the opposition. I am sure you will gladly hear what Mr. Lincoln had to say on this subject in one of his speeches. My notes fail to designate the date, but that is immaterial. Lincoln had this to say—hearken well to his words of wisdom:

"Now for the second portion of the message, namely, that the burdens of improvements would be general, while their benefits would be local and partial, involving an obnoxious inequality. That there is some degree of truth in this position I shall not deny. No commercial object of government patronage can be so exclusively general as to not be of some peculiar local advantage. The Navy, as I understand it, was established and is maintained at a great annual expense, partly to be ready for war when war shall come, and partly also, and perhaps chiefly, for the protection of our commerce on the high seas. This latter object is, for all I can see, in principle the same as internal improvements. The driving of a pirate from the track of commerce on the broad ocean and the removing of a snag from its narrow path in the Mississippi River can not, I think, be distinguished in principle. Each is done to save life and property, and for nothing else.

"The Navy, then, is the most general in its benefits of all this class of objects, and yet even the Navy is of some peculiar advantage to Charleston, Baltimore, Philadelphia, New York, and Boston beyond what it is to the interior towns of Illinois. The next most general object I can think of would be improvements on the Mississippi River and its tributaries. They touch thirteen States. Now, I suppose it will not be denied that these thirteen States are a little more interested in improvements on that great river than are the remaining seventeen. These instances of the Navy and the Mississippi River show clearly that there is something of local advantage in the most general objects. But the converse is also true—nothing is so local as not to be of some general benefit." [Applause.]

Mr. Lincoln also said in an address to the people of Sangamon County on March 9, 1832:

"Time and experience have verified to a demonstration the public utility of internal improvements."

MAGNIFICENT ENDS TO BE ATTAINED.

That, I think, gentlemen, is the new and the accepted and the sensible doctrine for both of the great parties of the country to-day. With these words of encouragement ringing in our ears we will confidently appeal to the General Government for the protection of this great alluvial basin. Every consideration of policy and of right would seem to dictate that this appeal should receive prompt and favorable response. This work of supreme national importance should be done for many controlling reasons. It should be done:

1. Because it will facilitate the transmission and rapid delivery of the vast volumes of the United States mail, a matter of great importance, not only to the people of the valley, but to the whole nation, and I might almost say to the whole civilized world. This will be brought about by protecting various railroads, which are otherwise subject at times to inundation.

2. Because these same railroads will be needed, or may be needed, in time of war, for the rapid transportation of troops and military supplies.

3. Because, in the long run, levees will help, as many eminent engineers believe and tell us, in deepening the channel of the river, thereby improving the navigation of this great national highway, which, with its dependent tributaries, will always help to regulate and cheapen freight rates, upon which is dependent, in part at least, the prosperity of millions of American farmers and other producers.

4. Because it is the sacred duty of the nation to control and use for its own, so as not to damage others, this being a familiar principle of law and equity. In other words, it is the duty of the nation to control and regulate the waters of the nation's river, so that they will not endanger lives and property along its banks.

5. Because, gentlemen of the convention, this is not only a river; it is something more than a river; something more, if you please, than God's great highway to the sea. It is also, as Mr. Blaine has said, a great national sewer, upon which is dependent the drainage of some 32 States and Territories. Common sense, common decency, and common humanity would seem to dictate that this drainage, some of it from far distant States, should not be permitted to overwhelm the dwellers and the property of the lower valley.

6. Because, in reclaiming this vast area, you will give the nation a new territory, a new world—the Eldorado that was long sought and at last found by De Soto, though he knew it not. The increased products from this source will keep the balance of trade in our favor and will permanently maintain for many years our present proud preeminence as the largest export nation of the world, while it will give plenty and prosperity to the present residents of the valley and to countless generations yet to come.

7. And, finally, gentlemen, discarding all reason, throwing all business and sordid considerations to the winds, we confidently appeal to the great loving heart of the American people, which "is in the right place" and which will respond generously in this, as in every other noble cause. But, gentlemen, I prefer, after all, to rely upon the justice of our claim. It is the duty of the nation to do this work, and therefore it will be done. The doctrine of noblesse oblige canopies

the world. It is obligatory upon all alike who have any degree of power and influence. It must be obeyed by the nation, as it is obeyed by the individual citizen, and, being the duty of the nation, we can be sure that the appropriations will be made. This would be the case if no material national benefits were to follow. But, happily, in this case the performance of a sacred duty goes hand in hand with self-interest, for you may be sure when these valuable lands are at last reclaimed they will pour their priceless treasures, a veritable shower of gold, into the lap of our beloved country. [Applause.]

Let us consider for a moment in this connection the results of somewhat similar, but more hazardous investments. You will remember that years ago when General Grant purchased Alaska he paid Russia, I believe, about $7,200,000 for this territory. At the time the expenditure was savagely criticised as a reckless waste of the public funds. Last summer I happened to have the pleasure of meeting Alaska's affable and able chief executive, Gov. John G. Brady. He was kind enough to send me his last report, and from that I gathered this interesting and important fact, that if we discard the output of gold and all other valuable metals; if we leave out of consideration the agricultural products, the timber exports, the fur fisheries and, indeed, all the other fisheries except that of salmon, it appears that the value of the salmon pack alone for 1902 actually exceeded the purchase price paid by General Grant for the entire district. [Applause.]

Again, you will remember that we paid Spain $20,000,000 for the Philippines. Now, I am going to make a remark that I am afraid will incur for me the censure of my distinguished friend, John Sharp Williams, who I notice on the platform, when I say that, so far as I am concerned, I am glad that the Stars and Stripes still wave over the Philippines. [Great applause.] And it will continue to wave, my fellow-citizens, "long after you and I, like specks of moving cloud, shall have faded into the infinite azure of the past." [Applause.] The present generation shall not have passed away when it will be generally recognized and universally admitted that the original purchase price, with all the superadded expenses, are mere bagatelles as compared with the benefits to be derived. I wouldn't have said this, perhaps, a few months ago after just coming under the spell of the most forceful, eloquent, and persuasive article that it has ever been my good fortune to read on this subject, the powerful argument delivered before the National Congress by Mr. Williams. Then I felt like saying to him, as Agrippa to Paul: "Almost thou persuadest me to be a Christian." [Applause.] But, gentlemen, if the retention of the Philippines should do no other thing, it would repay the nation a hundredfold for all of its outlay by forcing the early building and completion of an isthmian canal. [Applause.] This will infuse new life-blood into the whole country, and will be a particular benefit to our beloved Southland. As to this great metropolis of the South, whose delightful hospitality we now enjoy, and which makes us almost feel, like the lotus-eaters, that here we would like to abide forever, the isthmian canal will make its capital increase to an incalculable amount, and there is no reason why, ten years hence, its population should not be a million of souls. [Applause.]

My point is that if we can make these wise expenditures away up near the Arctic circle and in the far-off isles of the sea, why should not the nation improve its own? Why should the Government hesi-

tate to develop this country, which, as someone remarked to me on yesterday (I believe it was Mr. Tompkins), is in fact, as in shape, the heart of the nation? You can almost see it throb with joyous exultation at these developments that are to follow. Why should we hesitate at this, when every child knows that the undeveloped wealth here will exceed the combined wealth of Alaska and the Philippines multiplied time and time again? [Applause.]

I believe there are something over 19,000,000 acres of land in this alluvial valley, of which perhaps less than one-third are now under the plow. The ultimate additional value of all this property should equal, if it does not exceed, the value of somewhat similar lands on or near the banks of the Zuyder Zee. Why, think of it! This alone would add to the wealth of the country $9,000,000,000. This new territory would not be gained by the wiles of diplomacy, nor by war, a bloody trophy and a lasting evidence of man's inhumanity to man. It could be won in the prosecution of a great work from the waters of this mighty river. The increased annual value of its products alone you could safely figure at not less than $550,000,000. Add to this, as I have said on another occasion, the increased manufacturing and other urban values, and we would give the nation a royal prize before which the vaunted treasures of Ormus and of Ind must forever pale their ineffectual fires. [Applause.]

Gentlemen, every consideration of policy and right calls the nation to the accomplishment of this noble work. Mark you, it will be done; for, say what you will, the American Congress always represents the highest type and standard of American citizenship, and the people of the Valley can confidently rely upon its wisdom and justice. [Great applause.]

Hopes of Valley People Revived by the Government.

[By Hon. W. W. Heard, governor of Louisiana.]

Mr. Chairman and Gentlemen: In behalf of all the people of Louisiana, who will observe with eager attention all the proceedings of this truly national assembly, I welcome you with all my heart to our great Commonwealth and to this world-renowned metropolis. You have come from many States—from a domain so vast in extent and so limitless in its natural wealth and resources that they would constitute an empire so powerful that the proudest nations of the earth would do it homage upon terms of perfect equality. Yet these possessions are but a part—great, it is true—of the greatest republic and the greatest government in the family of nations.

Considering these incontrovertible facts, it would seem as if it would be but a plain public duty for this colossal Government of ours to adopt the requisite course and to devote the required means to place this vast domain through which flows the Mississippi and its tributaries in such a condition as to allow a tide of population to occupy its waste places, and, in unison with its actual population, bring forth for their own benefit and for the enrichment of all the country the enormous wealth that this imperial domain possesses to a large extent in a dormant state.

We can not but pause to admire the broad and enlightened statesmanship—calculating, if you will—of old England in capturing and

operating the Suez Canal and in the very recent past in investing scores of millions in the damming of the old Nile.

Is it not bewildering, then, when we come to think of the parsimony exhibited by a chain of Congresses in the appropriations that they have made toward the improvement of waterways and the protection of territory, before which the Nile and the country of Egypt would dwindle into comparative insignificance?

Can we admit that in this respect these Congresses have done justice to the business acumen and enterprising spirit of the American people?

Therefore it will be the mission of this representative convention to so vividly and intelligently exhibit before the country the magnitude of the interests involved in the questions over which you will deliberate that the coming Congress and the succeeding ones will deal with those interests in the way that so progressing and progressive a country as ours should deal.

The following, which is taken from a memorandum furnished me by the State board of engineers, will doubtless aid you in your deliberations and conclusions:

The delta of the Mississippi River subject to overflow extends from Cape Girardeau, 45 miles above Cairo, to the Gulf of Mexico, nearly 600 miles in an air line, and varies in width from 20 to 30 miles, amounting in area to 29,790 square miles.

The Mississippi River, which flows through this delta, carries the drainage of 1,240,050 square miles, which is 41 per cent of the total area of the United States. This area drained extends from the Rockies to the Alleghenies and from Canada to the Gulf of Mexico. It covers 1,800 miles in longitude and 1,500 miles in latitude. It drains 10 entire States, parts of 22 other States and Territories, besides a part of two provinces in Canada.

The States entirely draining to the Mississippi River are Nebraska, Kansas, Oklahoma, Indian Territory, Missouri, Arkansas, Tennessee, Kentucky, Iowa, and Illinois. The States draining in part to the Mississippi River are Montana, North Dakota, South Dakota, Wyoming, Idaho, Colorado, New Mexico, Texas, Louisiana, Mississippi, Alabama, Georgia, North Carolina, Virginia, West Virginia, Ohio, Pennsylvania, Maryland, New York, Indiana, Wisconsin, and Minnesota. The area thus drained by the Mississippi River is as great as the combined area of Austria, Germany, France, Holland, Italy, Spain, Portugal, and Great Britain.

Thousands of miles of streams and rivers carry this drainage to the Mississippi River, and of these 15,000 miles are navigable streams.

The average rainfall carried annually to the sea by the Mississippi River amounts approximately to 85,000,000,000 cubic feet, or 155 cubic miles of water, and this is estimated as being only 25 per cent of the total rainfull over the basin, the remaining 75 per cent being lost either by evaporation or else by absorption and percolation through the ground.

Every year as the country becomes more open, better tilled, and therefore better drained, the volume of water finding its way to the Mississippi River increases and also reaches the river more rapidly, owing to the improved condition of drainage throughout the country, thereby swelling and increasing the intensity of the floods.

The damage is made greater from the fact that the lands of alluvial formation are highest at the banks of the stream. On the Mississippi

River these banks slope away from the river at the rate of from 3 to 12 feet in the first mile, then at a diminishing rate until a distance of 2 or 3 miles from the river is attained, when the low level swamp is reached.

Between Memphis and Vicksburg to the east of the river is the rich Yazoo basin, subject to overflow and embracing 6,648 square miles. Between Helena, Ark., and Arkansas City on the west of the river is the White River basin, subject to overflow and embracing 956 square miles. From Arkansas City to the Gulf, to the west of the river, are the Tensas, Atchafalaya, and Lafourche basins, all highly populated and thoroughly cultivated for cotton and sugar, which are subject to overflow, and which embrace 13,064 square miles. Finally, to the east of the river, from Baton Rouge, La., to the Gulf, are situated the rich Pontchartrain and Lake Borgne basins, within which is the city of New Orleans, all of which is subject to overflow, and covers 2,001 square miles.

These basins are the richest alluvial land, and have been rapidly opening to cultivation. On the lower river, from the Louisiana State line to the Gulf, they have been settled for about 150 years. They yield rich crops of cotton and sugar, yielding more in dollars and cents per acre than any other lands in the United States. They frequently give us as much as a bale and one-half of cotton to the acre, which represents a value of $75, while the sugar yield is even greater. Hence, the people have taxed themselves to the limit to keep away from their fields and homes the flood water due to the drainage of 41 per cent of the United States.

In order to do this the people have subdivided the vast territory just mentioned into some twenty levee districts, organized under the various State laws, and operated by boards of commissioners generally appointed by the governors of the various States, although some of them are elected.

These boards have by law the power of levying and collecting taxes to build levees, and this taxation takes all manner of forms to bring as large a revenue as possible. All the districts have an ad valorem tax on the assessed value of the property within their boundaries, varying from 5 to 16 mills on the dollar. Additionally they tax themselves from 2½ to 5 cents on each acre of land in the district. Also they levy a railroad tax varying from $5 to $100 per mile. Most of the districts tax every bale of cotton raised within their confines from 25 cents to $1. Every thousand pounds of sugar raised within their territory is taxed from 25 to 50 cents. Every sack of rice, barrel of potatoes, or of onions or oranges is taxed from 3 to 10 cents; in fact, all of the produce is taxed, and even the oysters do not escape it, as they are taxed a certain sum per barrel, on the ground that the exclusion of fresh Mississippi water from their beds is conducive to their health, and therefore to their quality.

In addition to this, these levee boards have issued large amounts of bonds, predicated on their revenues, and additionally the State of Louisiana imposes a tax of 1 mill for levee purposes on all of the State's assessments, whether they be hill property above overflow or bottom lands subject to overflow. The tax in the several levee districts in this State is very heavy, amounting in most of them to 1½ per cent. Besides the $6,655,200 of bonds already applied to levee work in the Mississippi Valley, the districts derive from taxation $1,960,000

annually. Of this, it is safe to say that $1,500,000 is actually expended in earth work, the balance being devoted to the payment of interest on bonds issued and the cost of administration and operation.

Prior to 1882 the United States Government contributed nothing to levee protection. After the great flood in 1882 the Mississippi River Commission spent some money on levee building under the theory that in order to obtain and maintain deep-water navigation a confinement of the waters within the banks was necessary. For many years following the amount spent by the Government on levees was limited to such stretches as were deemed by the Mississippi River Commission as falling under the above consideration. No money, however, would be spent for the express purpose of affording protection from overflow.

Four or five years ago Congress removed this objectionable clause from the rivers and harbors bill and allowed the river commission to spend such money out of the appropriation for the purpose of giving protection from overflow as it deemed expedient. In accordance with this policy the river commission has allotted approximately $1,000,000 per annum to levee building. This amount is effective, less the sum to be deducted for the cost of administration, which is about 5 per cent, leaving about $950,000 to be expended for earthwork.

The help of the Federal Government has revived the hopes of the residents of the valley, who have been reduced to despair by the great overflows of 1882, 1884, and 1890, and although the great flood waves of 1892, 1893, 1897, and 1903 have broken the records of the past, and their successive records culminated in the great flood of this year, the amount of territory overflowed this year from breaks in the levees is only 10.7 per cent of the area of the valley. Hence the alluvial residents are taking new heart and are straining every effort to build their levees higher and stronger.

The efforts thus shown evidence the magnitude of the work done for the effective control of the great river and its tributaries under the only system that could be carried on with the meager means at hand. These means, drawn in greater part from the property owners whose all is at the mercy of the waters descending upon them from the upper country, impose burdens upon them that the National Government should not permit them to stagger under, since it and the commerce and industries of the country would be the principal beneficiaries from the protection that it would extend to these magnificent lowlands.

Navigation and the protection of these lowlands could be vastly promoted by some plan designed to deflect the flood waters of some of its tributaries for the irrigation of the arid lands of the Rocky Mountain region, the Territories and the Texas Panhandle.

Surely American engineering skill, which has accomplished so much in this country and abroad, should be capable of devising a system of works combining all of these purposes. The success of such a system would have marvelous results, and while the Government should be appealed to for appropriations adequate to afford ample protection under the actual plans, it will not be inexpedient for this convention to give consideration to this subject, in which so many States and Territories would have a large interest. The subject is not a new one, and it has already received a thoughtful and favorable consideration from civic bodies wielding considerable influence upon public opinion and Congress.

I trust, gentlemen, that you will not proceed with too much haste in your deliberations, for much is expected from the talent, the knowledge, and the patriotism which are assembled in this great convention.

You are welcome, thrice welcome, to our splendid metropolis, and I want to assure you that this welcome will endure as long as you may wish to remain within its limits. You are at home here, Mr. President and members of the convention. [Great applause.]

Water the Cheapest Way to Market.

[By Mr. J. L. Vance, of Ohio, President of the Ohio Valley Improvement Association.]

Mr. President and gentlemen of the convention: I intended to second the nomination of our distinguished chairman, Governor Stanard. I am glad now that I didn't do it, because, while I have listened carefully to-day to all the remarks that have been made, and with much pleasure to the statistics given in regard to this great valley, it yet remained for you, Mr. Chairman, to speak for the first time of the greatest tributary of the Mississippi, the mighty Ohio. [Applause.]

I ask your indulgence, and the indulgence of the convention, for but a few minutes. I understand that we have now reached the point where the real business of the convention begins. I am here in somewhat of a dual capacity. Under the commission of the governor of Ohio, I represent that State upon the floor of this convention. [Applause.] By the unanimous vote of the Ohio Valley Improvement Association, together with my distinguished friend, Captain Ellison, who is the secretary of that body and the president of the Cincinnati Chamber of Commerce, I have the honor to represent that association, with its 15,000,000 constituents. [Applause.] We are here to represent and to speak for that organization in all of its ramifications in all its fourteen States, beginning away up at Cattaraugus, in the State of New York. And here I want to object for one moment to a few words of the distinguished chairman. Sir, there are no longer any northern waters, or southern waters, or western waters, or eastern waters; they belong to us; they are our waters; they are the free channels of commerce of all the people of our country. [Great applause.]

The Gulf of Mexico should become the harbor of the United States, and, to use the exact language that I used at one time before, the Ohio and other tributaries of the Mississippi River should become the cheapest channel leading to it, and all the ships of the world should come to this imperial city of New Orleans to load or unload their wealth of cargoes. [Applause.]

I will detain you but a few minutes longer. [Cries of "Go ahead!"] I said a moment ago that I was here in a dual capacity. When I was first notified by your distinguished secretary—and you will permit me to-day to pay him the compliment of saying that the interests of the city of New Orleans and the interests of the Mississippi Valley are well taken care of by Captain Bryant [applause]—when I was first notified by him of this convention it was my understanding that it was to be but a one-day meeting. I now learn that the time has been lengthened to three days. Mr. Chairman and gentlemen, if you do your work well it will take you two days, anyhow, and you will have to lap over to the third day to listen to some of your distinguished citizens. [Laughter and applause.]

Now, gentlemen of the convention, I don't know just exactly where I am "at." I have listened to all of these gentlemen to-day, and your chairman is the only one who has mentioned the Ohio River. I don't know what my distinguished friend on the right, Mr. Anderson, one of the leading and most able citizens of Pittsburg, who comes to your convention from a distance farther than anybody else here; I don't know what my friends upon the left—I don't know what part they are to take in this convention. We are all here for business. Governor Stanard has said that St. Louis and that section want your help. Well, we want your help, too [applause], and let me tell you, gentlemen, that you need and must have our help to enable you to succeed. [Laughter and applause.] And when you join the forces of these twenty-seven States together, and bring their members of Congress, both in the House and in the Senate, forward as one man for the improvement of our inland waterways, all the power that the politicians can array against us can not prevail. [Great applause.]

At the head of the great Ohio River, 2,000 miles from where we stand to-day, is the greatest manufacturing center in the world. Why, they make there, for shipment to the markets of the world, 100,000,000 tons of freight per year. This must go to these markets, and the cheapest way to do it is by water. Improve the Ohio, and fix up the Mississippi River until it is navigable from Cairo down, and you will see the great mass of tonnage of Pittsburg coming to the city of New Orleans, seeking through its gates the markets of the world. [Great applause.] All along that river are gigantic manufacturing interests—the greatest in this country, their products seeking also the markets of the world—and they must come down the Ohio. Imagine for a moment, my friends of New Orleans and the Mississippi Valley, that you could pull out the fires from under the furnaces in the Ohio Valley; that you could stop the smoke ascending to heaven from those immense chimneys; that you could call forth the miner from the mines and stop the production of coal and iron and steel, and all the other great products of that richest of all valleys given our country by the Creator—did you ever realize, if these things should come to pass, that you would not see the smoke of a steamboat except your local packets upon the bends along the Mississippi River, and that your commerce would dwindle until it became imperceptible? [Applause.] Did you ever realize further, that that Ohio Valley produces more tonnage than the whole Mississippi Valley combined outside of it? [Applause.] Did you ever realize that more passengers are carried upon the Ohio River than upon the Mississippi and all its other tributaries?

I have just one or two other little things to say. I have always believed in the future of this great Mississippi Valley of ours. I know that its wealth is inexhaustible. I know that it is the duty of the Government to help along the improvement of this river, and to-day the question (here I differ with all the speakers who have preceded me) is not a local question; it is not a national question; it is an international question. [Applause.] The sooner you realize that, the sooner you adopt and act upon that fact, just that much quicker will you accomplish what you came here to do. [Applause.]

When the Ohio River is improved, and the Mississippi River is improved, the city of New Orleans will take on new life and will become the greatest export town in America. [Applause.] I am not

speaking idly when I make that assertion. It is a fact indisputable that trade follows the cheapest line of transportation. The great coal mines, the iron and steel works, and all other industries that employ capital and labor in the Ohio Valley, and those upon the banks of its tributaries, beginning with the Monongahela and on down to the Wabash, stand ready to-day to ship their coal, their structural iron and steel, and all other heavy freights they have to New Orleans for transshipment to the markets of the world. [Applause.] By you and by those who act under your guidance a great duty is to be performed. I trust it will be performed in a spirit of fairness to all sections. [Applause.]

The president of your convention this morning took occasion to refer to the war. While he was speaking I recalled the fact that I was stopped at Vicksburg on my way down the Mississippi River forty years ago. [Laughter and applause.] I remember that one of my friends on the other side of the fence (I don't know who he was) gave me a reminder that has been with me ever since, and that I can't get rid of. [Laughter and applause.] But that man, and all the other men who were just across the border holding that city with almost unparalleled heroism, found on the outside of their gates an equally heroic people, and after the battle was lost, the victory won, and peace declared, then, thank God, they became brothers again. [Great applause.] United as we are to-day, we can not only sweep off the armies of the world, but we can control that which is of much greater benefit—the markets of the world. [Applause.] Our products will find their way down the Ohio and down the Mississippi to New Orleans, and from there to all the ports of the world. Mr. Chairman, and gentlemen, I think you very much. [Applause.]

The Mississippi the Property of the Nation.

[By Hon. N. C. Blanchard, of Louisiana.]

Mr. President and gentlemen of the convention: This is a great country of ours. It has the largest rivers, the greatest lakes, and the longest line of seacoast of any country on the face of the globe. It is too great, and grand, and glorious for any sectional spirit longer to be tolerated. Away back in the early part of our country's history, when President Jefferson negotiated the purchase of that vast territory extending from the Gulf of Mexico on the south to the Pacific Ocean and the British possessions on the far northwest, the principal inducement actuating him was that the United States of America might come into the control of that vast system of waterways composed of the Mississippi River and its tributaries. That country, including the Mississippi River, was purchased out of the common treasury. The Mississippi River, therefore, is doubly the property of the Federal Union. [Applause.] It is its property, not only by reason of the fact that we acquired it by treaty with France, but we acquired it as a piece of property by purchase out of the Treasury.

If the Mississippi River be the property of the Federal Government, if the Government's ownership and jurisdiction over it is paramount, which no one denies, then there results to the Government a corresponding responsibility with respect to that river. [Applause.] The principle upon which such responsibility rests is embodied in that

salutary maxim of the civil war, sic utere tuo non alienum lædas. The Government of the United States, owning the river as it does, has no right to permit the river to remain a terror and to become a demon of destruction to those who live in its lower valley. [Applause.]

It took many years of effort on the part of devoted men to hammer that idea into Congress and to develop favorable opinion on that line among the people of the American Union. This great convention, fellow-citizens, sits here to-night, the representatives of a large portion of the sovereign power that is vested in the American people. You are here to make known your wishes to Congress, and let me tell you that when you speak, when any considerable portion of the American people speak, and when Congress knows that public opinion is aroused demanding that certain things be done, those who compose the National Legislature at Washington will not only hear, but they will heed. [Applause.] I know whereof I speak, because I was there for many years. The ear of Senators and Congressmen is close to the ground, listening to the tramp of public opinion and to ascertain which way it is moving on any great question. [Applause.]

Fellow-citizens, we are here to-night to insist upon Congress going yet further than Congress has ever yet gone in the direction of the recognition of its twofold duty to the great river. But while we are here to-night in this convention to insist that Congress take charge of the river entirely to prevent its floods, I am here to tell you that Congress in the past has not been illiberal; that much has been accomplished, and from that I argue that Congress will continue to be liberal, and that this other last and final step in the control of the river, which this convention is here to demand, will yet be taken by Congress in the near future. [Applause.]

Fellow-citizens, the struggle to impress upon Congress its duty in respect to the Mississippi River has been a long and memorable one. When the war closed there were no levees upon the Mississippi River except a few disconnected or unconnected lines, and this vast alluvial valley was the plaything of the floods of the Father of Waters. When the people of the South came into their own again (by which I mean when the government of the Southern States passed into the hands of the intelligent and property-holding classes), Representatives and Senators of those classes were sent to Washington, and they took up the fight for the river, not only to improve its navigation, with respect to which no one doubted the constitutional power of Congress to deal, but also on the proposition that it was the duty of Congress to assist in controlling the flood waters of the river, and that there was abundant justification or authority in the fundamental law for that, as well as there was for the improvement of the navigation of the river. [Applause.]

That distinguished son of Louisiana of whom your chairman has spoken, Senator Randall L. Gibson, and others with him in Congress at that time, among them Col. E. W. Robertson, of the Baton Rouge district, began the work for the river and for the valley, and in 1879 a bill was passed creating the Mississippi River Commission. All the great rivers of Europe had been improved in that way, namely, commissioners had been appointed to study their phenomena and to devise plans for their rectification and improvement, and for the protection of their valleys from floods. As your chairman told you to-day, levee construction as a means of preventing inundation is of most ancient

origin. Not only did the Assyrian Queen of whom he spoke cause dikes to be constructed to prevent the great Euphrates from overflowing its lowlands, but Nitocris, who succeeded her, paved the banks of that river with burnt brick in order to prevent the erosion of its channel by the current. So that levee construction and bank protection both date back to a very remote period. Many of the rivers of Europe, all of those of alluvial formation, have been leveed, such as the Po and the Rhine and the Vistula and the Arno and the Meuse and the Scheldt. We think we have extensive levees upon the Mississippi River, and so we have; but let me tell you that upon the Vistula in Europe some of the levees are 20 feet high and 20 feet broad at the top.

Now, the Mississippi River Commission, which was created in 1879, was given in charge the duty of not only devising schemes for the improvement of the navigation of the river, but also of devising plans and reporting to Congress what, in their judgment, was necessary to prevent the floods of the river. It was the first recognition by Congress that Congress had anything to do with the question of protecting the lowlands from inundation. But after the bill was passed creating the commission, it was not until 1881 that the first appropriation was made for the river, and it was so hampered that but little of it could be expended for levee construction. Then followed the bill of 1882. I was there, for I had entered Congress in 1881. That bill carried an appropriation of more than $4,000,000 for the river, but it contained the restriction that none of the money should be expended for levee construction except where, in the judgment of the commission, levee construction on the banks was a necessary adjunct to channel improvement. It was all for channel improvement, to benefit navigation, trade and commerce, but not one dollar in recognition of that other duty that Congress owed to the valley, namely, to assist in holding back the angry waters of the great river. And so on, down to 1892, every rivers and harbors bill that carried intermittent appropriations for the river contained always that fatal clause: "*Provided*, That no part of this money shall be used for the purpose of preventing inundations of the river except where, in the judgment of the commission, levee construction upon the bank is a necessary adjunct to channel improvement."

Now, those of us in Congress who took up this question early (and I was one of those; I became a member of the Rivers and Harbors Committee in 1884, my friend, General Catchings, coming in two or three years later and joining me on that committee), made the fight in season and out of season, making speeches year in and year out, hammering, I repeat, into the heads of Congressmen that the Government owed another duty to the river beyond improving its navigation, and seeking by our speeches to develop a sentiment in the country outside of Congress in favor of that idea. For ten years I myself made speeches of that character, and other gentlemen from Louisiana and some from Mississippi and Arkansas did the same, and it took us many years, or, from the time that the Mississippi River Commission was created in 1879, thirteen years, to reach the consummation of our hopes when we could write into the rivers and harbors bill an appropriation for the great river which did not contain that restrictive clause. And how did we accomplish it, fellow-citizens? The great levee convention of 1890, of which your distinguished chairman spoke, greatly

assisted in the work. Let me tell you right here that the lower House of Congress is a most difficult arena to make headway in on any proposition involving a great outlay of public money, and that it took something more than resolutions of a convention or the development of sentiment in one particular section of the country to attain the end we had in view. In 1891 (I had then been nine years a member of the Rivers and Harbors Committee, and its chairman) I made a trip from Buffalo to Duluth, through the Great Lakes and down the western shore of Lake Michigan.

I am not telling this to you with any purpose of exploiting my own deeds, but to show you in a practical way how results are reached in Congress. We are here for a practical purpose. We are here to secure from Congress the passage of acts that will commit the Federal Government absolutely to the control of the great river. Now, all legislation, and especially all important legislation, at best is but a compromise. There are great interests in this country that need legislation as well as we need it for the lower river, and those of us in Congress from the lower river recognized that, and we knew that if we could form an alliance between the lower Mississippi River States and the States bordering on the Great Lakes that we could absolutely control river and harbor sentiment in Congress and dictate the action of Congress in respect to the same. That was the purpose of myself and others in passing through the Great Lakes, stopping at important points and making speeches, preaching to those people the doctrine of a reciprocity of interests between the Lake States and the lower Mississippi River States. And the people up there were ripe for that doctrine. They received it with open arms. They had great lake channels to improve. They had great lake ports to deepen. Why, the great lock and dam at the Sault Ste. Marie alone cost $5,000,000, and it was yet in an incomplete state. Millions of dollars were needed for the lake ports and channels and harbors, and we needed millions for the lower Mississippi River. So a combination, if you will (and I speak plainly), was hatched on that trip, and when Congress met in December, 1891, the details of that combination were worked out in the committee room of the River and Harbor Committee, and when, in the early part of 1892, I reported the rivers and harbors bill of that year, it astonished the country. Why? Because, while it carried only $20,000,000, it authorized the expenditure of $27,000,000 more under the continuous-work or contract system, and among the projects that were so included in the continuous-work system, authorizing the Secretary of War to make contracts, the idea being to have continuous work to reach the desired results, there was written in the bill, for the Mississippi River, $16,000,000, to be expended in four years' time, $10,000,000 from Cairo to the Gulf, and $6,000,000 above Cairo. [Applause.]

Then, for the first time in the history of the Government, the appropriation for the lower river was made without any restriction whatever. It was boldly proclaimed upon the floor of Congress, I making the opening speech, that this was a levee bill pure and simple. It meant not only money to continue the works needed for the improvement of the navigation of the river, but it meant authorizing the Mississippi River Commission to expend every dollar of the appropriation if they saw fit for the protection of the valley of the river from inundation. [Great applause.]

When that bill went to the senate it passed in that shape. Why? Because the combination that had been made included two-thirds of both houses of Congress, and we had votes, if need be, to pass it over the President's veto. But he let it become a law without his signature.

Now, fellow-citizens, what followed that? The Mississippi River Commission met at its office in New York, and Senators White and Gibson of this State, Representative Catchings of Mississippi, and myself were there.

We made speeches before the Commission, and as the author of the bill, having written the Mississippi River clause with my own hand, I could tell the Commission that it was a levee bill; that such was the purpose of Congress in enacting it; that the intention of its enactment had been boldly proclaimed on the floor of both Houses of Congress; that it was a new policy of the Government in respect to the great river. And the Commission allotted $6,000,000 of the $10,000,000 for levee construction pure and simple to prevent floods. That money was expended in four years under the contract system, and at the end of that time another great bill was passed, cast on the same lines, and using the same phraseology, appropriating $9,000,000 for the river from Cairo to the Gulf. So that, fellow-citizens, in two bills $19,000,000 were appropriated by Congress and used in greater part for levee construction and repair, and in part as a result of those two bills we have to-day long lines of levees protecting the alluvial valley of the Mississippi River, constituting the finest levee system ever known in any age on any river, and on every mile of it is the stamp of the Federal Government. [Great applause.]

You will now see that much has been accomplished. It will not do to say that Congress has not risen measurably to the discharge of its duty in respect to the river. It has, but it has not gone far enough, and we are here to-night to ask that it go farther. While I am on my feet I wish to do justice to some of the Senators and Representatives in the Congress of the United States from that section of the country which is most remote from the great river. It has not been a sectional struggle. We have had aid from sources that derived no direct benefit from what was done on the river, and I want right now to say, from an experience of sixteen years in the two Houses of Congress, that the Mississippi River owes a debt of gratitude to the distinguished gentleman from the State of Maine who presides over the Commerce Committee of the Senate, Senator William P. Frye. [Applause.] I can't mention all those who stood with us, but I recall that we always had the aid of Senator Matthew Quay, of Pennsylvania [applause]; we had the aid of Senator McMillan, of Michigan, and we had the aid of many distinguished Senators and Representatives other than those I have named. And I want to say to my friend from Ohio who spoke here to-day, and to his friend to whom he referred as from the valley of the Monongahela River, that while we were taking care of the Great Lakes and the lower Mississippi and the upper Mississippi in the great bill of 1892 and the one that followed it we took care of every other section of the country, and especially did we always take care of the Ohio River, for which he so eloquently spoke. I want to say to that gentleman that while I was chairman of the River and Harbor Committee I visited the Ohio River and stood at the great Davis Island Dam, a few miles below the junction of the Allegheny and the Monongahela rivers, and that I voted as liberally and as cheerfully for an appro-

priation for it and for other stretches of the Ohio River that needed improvement as I did for the lower Mississippi River. [Great applause.]

And I want to say to his friend from the Monongahela that when, as chairman of the River and Harbor Committee, I went up that river to see its needs, and found it fettered by locks and dams owned by a corporation, that the Committee on Rivers and Harbors decided that that river should be made free and its coal output untaxed, and this was carried out. [Applause.] I wrote with my own hand the proposition that first went into the river and harbor bill committing Congress to the purchase of those locks and dams through which the coal and commerce of that region passed, and Congress did purchase those locks and dams, and enlarged them, and made that river free to-day. [Great applause.]

There is no question any longer of the method of preventing the floods of the river. That has been settled. We fought the battle over levees and outlets and reservoirs for ten years in Congress. Every known authority, living or dead, was consulted; every investigation that was possible was made. The very Mississippi River Commission itself was appointed by Congress for the purpose of determining what was the best method of treating the great river, and let me say to you that the outlet system was unqualifiedly condemned, the reservoir system was discarded as impracticable, and Congress years ago settled down to the levee system as the only one at all applicable to the great river to reach the results that we desired to attain. [Applause.]

So I take it there is no necessity to enter again into an academic discussion of that kind. We are here as levee men; we are here knowing that the way to harness the great river and prevent it from becoming a terror to those who live in its lower valley is to build the levees high enough and strong enough to withstand any flood. [Applause.] We believe it is the duty of the Federal Government to do this, though if the truth be told of the fine levee system we have, but a comparatively small portion of it has been at the expense of the Federal Government. Let me tell you men of the North in this audience that we in Louisiana tax ourselves in two ways for levee construction and repair. We have a State tax that rests on all property throughout the State, whether it be in the alluvial valley or in the hill country of north Louisiana whence I come. Then we have the alluvial regions of Louisiana subdivided into levee-taxing districts, and we authorize those districts to levy upon all property and all produce within their limits taxes equal to 10 mills each year. So that this magnificent line of levees of which I have spoken is, in far greater part, the result of the expenditure of money raised by taxation in the States of Louisiana and Mississippi; and in recent years Arkansas has created levee-taxing districts also.

While this is the case, nevertheless these levees have to be built higher and made stronger. This great river is the property of the National Government, and no State can adequately handle it, because, first, the proposition is too vast and costly for any one State; secondly, because the Government of the United States alone has authority under the Constitution to say in what way the river shall be handled and regulated; and because, in the third place, the Federal Government is not circumscribed by State lines. It can treat the river as a whole, whereas no State can treat it except as along the reaches of the river that may be within the State or on its border.

The time has come, fellow-citizens, I repeat, for Congress to recognize its full duty. While it has made the appropriations of which I spoke, nevertheless there has been no statute enacted by Congress that specifically requires the War Department, through the Engineer Corps, to take charge of the river, to police and protect it, and prevent its floods. The time is ripe for the American people to instruct their Representatives and Senators to do this. The time is coming when we will desire to utilize the forces and elements that are in the waters of the Mississippi River, to build up our low places and renovate our worn-out lands by a system of lateral levees, such as obtain on the Nile, and that can't be done by the States – I mean, regulating the discharge of water in on these basins made by lateral levees. The Federal Government alone can do that. A State can not say that an outlet shall be made in the river, because if you grant to the State the right to make one outlet it would have the right to make a thousand, and in that way the navigation of the great river itself might be destroyed. When the river or the country through which it runs was purchased from France, and when the States bordering upon the lower Mississippi were admitted into the Union, it was upon the condition that the navigation of the river should ever remain open and free to the trade and commerce of the world. [Applause.]

So, fellow-citizens, it is to the Federal Government that we look, that the American people should look, to take charge of the river; to say what shall be done to it and what shall not be done to it; and I trust that this convention will, in the resolutions that it adopts, speak in no uncertain tones on that line. Let this convention recommend to Congress, let it urge upon Congress, let it demand of Congress, that the Federal Government put forth its hand, and put it forth with such vigor and strength in respect to harnessing the great river that it will no longer be a demon of destruction to those who live in its lower valley. Let it put forth its hand in such a way as to stay its angry waters, and, in reverential imitation of the Divine Teacher of Galilee, say to them, "Peace! Be still!" [Great applause.]

The Allied Question of Irrigation.

[By Hon. James Wilson, Secretary of Agriculture.]

Mr. President and gentlemen of the convention, I thank you very heartily for this kindly greeting of yours. My main object in coming South at this time is to visit the cotton fields and see what damage the boll weevil is doing. [Applause.] I want also to visit the rice fields and see how far you have got toward growing all the rice we need in the United States, and how soon it will be necessary to help arrange the legislation so that you can ship it abroad and begin to feed the world outside. [Applause.]

Speaking about the Mississippi River induces me to hark back to olden times. Thirty years ago the people of a district in Iowa sent me to Congress to help get the lower Mississippi River jettied, so that freight vessels drawing 26 feet could come over your bar, and I see sitting before me an old colleague of mine who was a leader in the House at that time. It looked hopeless for quite a while; the mouth of the Mississippi River seemed to a good many people a good way off; but Governor Stanard had very persuasive ways. [Applause.] He

told us that if ocean-going vessels drawing 26 feet of water could get up here this would become one of the great export cities of the country with regard to grain, etc., and it has. We got the river jettied, and this became, I think, the second export city of the nation. [Applause.]

I remember being in California once. They had an awkward way up there of holding you up and asking if you were ready to admit that California was the greatest State in the Union. [Laughter and applause.] I got a little tired of it, and finally one day I was surrounded by a few very nice young fellows representing the press. They said: "What are you doing here?" "Oh, just looking around." "Don't you believe California is the greatest State in the Union?" "Oh, certainly; anybody will admit that." "Well, what are you doing here? You have something in mind." "Well, to be frank with you, I have." "Let us have it," and they drew out their pencils. "Why," I said, "I am hunting this coast up and down to find a man who has as much confidence in its future as I have myself." [Laughter and applause.] Now, gentlemen, I will not apply that to you. I think you well understand the coming greatness of the Gulf ports. Why, a child can begin rolling a barrel away up in Minnesota and can roll it all the way down to the Gulf of Mexico. That is the natural place for our products to come to to seek the markets of the world, down hill. There is no doubt about it at all. Just as soon as we cut the Isthmian canal, wherever it may happen to be cut [applause and laughter], prosperity will come to the Gulf ports and your people will not have to go after it. It will be here, and it will be up to you to take care of it. [Applause.]

Now, with regard to the Federal Government taking care of the levees down here on your great river, I must say that I am exceedingly interested in it. It is a new proposition for me, and you have my sincere sympathy in pushing it. [Applause.] You have now a man in the White House who is broad enough to sympathize in all these great national movements, and you will get as much encouragement from him as you will from any of your own people. [Applause.]

I have been studying the other end of this question—the question of moisture—which is the most prominent in agriculture. Congress took a step forward in the enactment of the great irrigation law, whereby the waters are to be held up and let out on the dry and arid plains of the West, and the lands to be sold to actual settlers for the cost of doing the work. That was a great step in advance. When we come to look at it squarely in the face there was no good reason why the people's money should be taken to improve rivers and harbors and nothing should ever go to those people up there, and so it was concluded to be a wise move.

There are several things to be considered with regard to the surplus moisture you get from the great Father of Waters every year. The Weather Bureau is part of my Department. We had to tell you within the past year that the Mississippi River would go higher than it had ever gone before, and that you would have to take care of your levees—and you did. Now, why is this river getting higher and higher? You haven't seen the end of it. It is going to call for more and more efforts all the time, because the causes that bring it about are more and more in evidence. The great reservoir of water is the mountain. It is natural for a mountain to hold water until it is full and can't hold any more, and then it comes out in streams through the summer, and the

flow of the river is kept up wherever these conditions prevail. The woodman has gone to work on the Atlantic coast and cut through to the Pacific, and he has chopped away the capacity of our mountains for holding water. These are the original reservoirs, but they are comparatively useless. Water falling on them runs off again and makes the biggest Mississippi River you ever saw—and it is going to continue to do that and make you a still bigger river.

You need more help than you imagine. Before the work can be done that must and should be done to counteract this, our mountains should be put in a position to hold water; they should become again the original reservoirs. Go down to the great Appalachian range and look at the conditions over there where the woods have not been touched. Go up there in the mountains, 6,000 feet high, and you will find the fir and the balsam up there; you will find the bracken and the moss, and all those other things that hold the water that comes from the clouds until the capacity of the mountain is filled, and these beautiful streams flow out and bless the land. Cut the woods down and there will be no beautiful streams, no delightful trout streams, and all these waters will come down into the Mississippi River in an inopportune time and call upon you to raise your levees higher. That's what's ahead of you. I don't wonder that you are somewhat tired of the expense of taking care of this great watercourse.

Now, in regard to the dam, that is the second thing after the mountain. European countries build dams to hold up water to use in dry times. You have got one of the heaviest rainfalls in the United States, and yet you have great droughts. I inquired into your crops here. Your yield of cane is light, because you had a drought here. This great river flows past your doors into the Gulf of Mexico, and you have lost one-half of your cane crop because you didn't use any of its waters.

Now, I don't mean to take the position that you can build two or three dams, and that it will interfere very much with the flow of the Mississippi River when it is at its height. Anybody will know that can't be done. The Department is giving out literature to the people along these lines, showing them that there is value in what comes from the clouds, and that we can not much longer neglect to avail ourselves of that value. Water is the carrying system of the soil for the benefit of the land. The plant food that is found in the soil, both mineral and organic, is brought to the roots of the plant by the moisture that is in the soil, and if there is not enough moisture in the soil to carry out that transportation system the crop can not be made a good one.

But our people will get to understand this water question, and whenever our people begin to study any great problem presented to them they always solve it on a common-sense basis. [Applause.] And they will solve this one on a common-sense basis.

While a few dams would have no appreciable influence on the great river when it gets down here, ten thousand dams might, and the day is coming when agriculture will be so well understood and the effects of drought will be so thoroughly attended to and prevented that people will hold the waters that originate in the outer reaches of the great river and all its branches and dam after dam will be built upon the basis of eking out the moisture necessary to make a normal crop. That time will come. It will take some time to appreciably affect the Mississippi River by that process, but they have done these things in

the Old World, and whatever they do there we can not only do here, but we can improve on them. [Applause.]

But I recognize the fact that you can not wait for the education of the people and the reforesting of the mountains. Your ability to pay taxes and raise money to keep your levees going higher and higher may be exhausted before that time. But some day within the United States agriculture will be better understood, and when the rain falls people will regard it as a blessing rather than a nuisance. These waters will be hoarded up all over the great valley, and then you will find an appreciable difference here and will go to work to lower your levees. [Applause.]

Gentlemen, I have no speech prepared, and have nothing to say. It was very suddenly that I was called upon to say a few words, but such a meeting as this is inspiring. I thank you and wish you well. [Applause.]

History of the Levee System.

[By Hon. Joseph E. Ransdell, of Louisiana.]

Mr. President and gentlemen of the convention: Some two years ago, in the city of Washington, I had the pleasure of listening to a magnificent oration of that prince of orators, Senator John M. Daniel, of Virginia. It was on the occasion of the celebration of the one hundredth anniversary of the removal of the capital to that city. The exercises were quite long, and everyone had grown tired when Senator Daniel was called on, late in the day, to deliver his address. He made a masterly effort, but when he concluded nearly everyone was worn out. That grand old son of Massachusetts, one of the greatest orators of the nation, Senator George Hoar, had to follow the brilliant Daniel, but when Daniel closed his speech two-thirds of the audience, completely fagged out by the length of the exercises, rose and left the room. The venerable Senator Hoar stood quietly while they were walking out, and then said, in that sweet and pleasant voice of his: "Unhappy is he that cometh after a king." [Applause and laughter.] I feel somewhat like saying that myself to-night. I know that you must be fairly tired out. Our exercises have lasted all day, but I beg of you to be patient with me for a few moments; I will not detain you long.

I feel highly honored at having an opportunity to address this great convention, probably the most important, in its ultimate results, that ever assembled in the Mississippi Valley. Heretofore we have had splendid conventions of the Western Waterways Association at Vicksburg, Memphis, Cairo, Davenport, and other cities, in which all the streams which empty into the Mississippi and its numerous tributaries were represented, and aid was sought for all of them, but this time it is the parent stream, the Father of Waters, which seeks relief, and all its dutiful children from the Alleghenies to the Rockies, together with many relatives and friends from other States, are gathered in its honor and anxious to render it aid. But even as to the Mississippi this convention can not generalize, for we are here to consider its levee system and the many problems connected therewith. The subject of levees is well worthy our earnest consideration. It has engaged for the past two hundred years the best thought of the brightest minds in our valley, and there is wonderful unanimity of opinion among them. It has

caused the expenditure of over $57,000,000 by the riparian States and the National Government, and fully $20,000,000 must be spent to complete and perfect it. When completed it will protect 30,000 square miles, equal to 20,000,000 acres, of the most fertile land on our planet, capable of supporting 12,000,000 to 15,000,000 agriculturists, who will prosper on the richest farms in the world and be heavy consumers of every manufacturing industry in the land.

This great system had its birth nearly two centuries ago when the first levee was constructed in 1717 in front of New Orleans, then a mere village. Since then its growth has been steady, until we now have 1,490 miles of levees, extending, in places on both banks of the river, from a point nearly opposite Cairo to many miles below this city, but it must be understood that much of this is deficient in section and height. The levees are not continuous, but there are considerable gaps at several points, such as the mouths of the Red, the Yazoo, the Arkansas, the White, and the St. Francis rivers, and through these gaps in seasons of flood the waters pour unrestrained, overflowing a large expanse of some 4,870 square miles, which has no protection whatever. The ultimate plan is to close all of them as nearly as possible.

Prior to 1882 the General Government gave no material aid to levees except by a grant of swamp lands to the several States in 1850. This grant was of little benefit, as the lands had no value until protected from overflow. In 1882 the first direct allotment of $1,300,000 was made for levees through the Mississippi River Commission. Since then appropriations, direct or indirect, have been made in every river and harbor bill, and the protection of the valley by means of levees has become the well-settled and established policy of the National Congress. The amount expended by the Government for levees to the close of the fiscal year ending June 30, 1903, is a fraction over $17,500,000, and the States and levee districts have spent something over $40,000,000, making the total cost of our levees about $57,000,000 to $58,000,000.

The River Commission, in its last published report, estimates that the present levees contain 168,479,726 yards of earth, which is 64 per cent of the entire system, and that it will require some 94,054,488 to complete them. No price is fixed on this work, but at 20 cents a yard—an outside figure—the additional cost will be less than $20,000,000. What we need, then, is $20,000,000, and considering the magnitude of the interests involved this is a very small sum. Nor do we ask all this money from Uncle Sam. We have helped ourselves nobly in the past, and will continue to do so in the future. We have taxed everything in the valley for levees, even the succulent oysters for which New Orleans is so famous. And here in Louisiana we have a general State tax of 1 mill for levees, which attaches to all property in the State, whether it be in the lowlands or on the highest hills. These taxes average about $2,000,000 annually. Out of this we must deduct costs of collection, interest on bonds, expense of maintaining existing levees and restoring losses, so that only about $1,200,000 a year can be spent on new levees. These taxes are a fearful burden, but we are willing to bear them a few years longer until our levees are complete if Uncle Sam will do his part and help as we deserve.

The National Government seems committed to a policy of about $1,000,000 a year for levees. This is not enough. We pay more

than that ourselves. We have spent already more than twice as much as Uncle Sam, and as he is, at least, an equal beneficiary, he should bear his full share of the expense. He has admitted the equity of our claim by spending $17,500,000 on us in the past twenty years, and has shown by the consistency of his appropriations for all these years that it is his intention to perfect our levee system. Then why delay it so long? If it will cost $20,000,000 to complete it, why not give us two or three millions a year instead of one, and bring this great work to a close in the next six or seven years? Great harm may come from delay, and incalculable good will result from prompt action.

We had last spring one of the greatest floods on record, and though the waters rose in many places from 2 to 4 feet higher than ever before, the levees behaved admirably. In the entire system there were only six crevasses of any importance, and the levee line washed away was only 11,650 feet, or a fraction over 2 miles. Of the 1,490 miles of levees, all held except these 2 miles, and of the protected area only about 10 per cent was overflowed.

This is certainly a fine showing and one which gives the greatest encouragement to all friends of levees. It demonstrates as never before that the waters can be successfully confined in the channel of the river. In spite of that enormous flood, which was actually 4.6 feet higher just below Memphis than the record-breaking water of 1897, 3.1 feet higher at Memphis, 2.4 feet higher at Greenville, and 2.5 feet higher just below Lake Providence, the levees in most places stood the strain successfully, and this, too, in spite of the fact that very few of them have been completed to commission grade of 3 feet above the water of 1897. If this be the record, and we have only 10 per cent of loss in the greatest of floods, when only 64 per cent of earthwork of our levees is in place, what will it be when we have them completed? In my judgment, the mighty Mississippi will then be under perfect control, and will go quietly to the sea, confined to its channel and incapable of harm. Perhaps this view is too optimistic. In discussing this question our great levee authority and eminent citizen, Maj. B. M. Harrod, said recently: "Crevasses will occur as long as trains are derailed or collide, as ships are wrecked, as fireproof buildings are destroyed." And perhaps he is right. Occasional disasters may come, but they will be few and far between. In the main, the valley will be safe, and peace and plenty will reign among the happy millions of our promised land.

Mr. Chairman, the object of this gathering is to induce Congress to make larger appropriations for levees, and in order to bring that about we must convince the nation of our needs and the justice of our claims. For us who live on the banks of the great river and suffer from its floods no argument is necessary. It seems to us our case is so urgent that its bare statement should appeal in thunder tones to our national lawmakers and compel them to grant us relief. We imagine our condition is much more urgent and meritorious than any others, and many of our people find it strange that so little is done for us. To these persons I desire to say that this is a great country, with innumerable rivers and harbors needing Government aid, and that each Congressman thinks his own rivers and harbors as important as the Mississippi. I have studied this question carefully, and am convinced that we have no just cause for complaint. I believe we have received, at least for the past twenty years, a reasonably fair share of the sums appropriated

for rivers and harbors; but, in my opinion these sums have been totally inadequate not only to our needs on the Mississippi, but to the needs of our country at large, and in future the amount of river and harbor appropriations should be much increased. I do not think these appropriations have kept pace either with our wonderful commercial growth and rapid increase of population or with other great items of national expense. A comparative table, prepared by Hon. Theo. E. Burton and used with much effect in his great speech in Congress on the last river and harbor bill, shows the following increase per cent of rivers and harbors and several other appropriations from 1879 to 1902:

	Per cent.
Rivers and harbors, 1879 to average for 1901 and 1902	42
Rivers and harbors, 1879 to average for 1900 and 1901	152
Post-Office, 1879 to 1902	272
Army, 1879 to 1902	352
Navy, 1879 to 1902	451
Agriculture, 1879 to 1902	1,709
Fortifications, 1879 to 1902	2,577

Thus we see that while the other great appropriation bills are increasing very rapidly—going forward, in fact, by leaps and bounds—that for rivers and harbors is sadly behindhand.

The following table prepared by me shows that the average annual appropriation for ten years ending June 30, 1904, was:

For rivers and harbors	$17,865,615.50
For Agriculture	3,999,406.50
For pensions	144,025,442.00
For Post-Office	109,924,500.50
For Indians	8,523,845.50
For fortifications	6,474,899.00
For Army	59,645,386.50
For Navy	52,148,387.50

It thus appears that the Post-Office, which is very close to all of us, received six times as much as rivers and harbors; that the Navy, one branch of our war service, received three times as much; the Army, three and one-half times; and the Navy, Army, and fortifications combined, which constitute our national defense, six and one-half times as much as we have paid to aid in developing the magnificent commerce which makes us the greatest nation on the globe; that commerce on which the sun never sets; that commerce which rises with the bright orb of day and follows him in his course, keeping time to the music of the spheres and filling the world with the eloquent voices of our drummer boys pleading ever in dulcet tones the commercial supremacy of America.

There is no good and valid reason for this. Every dollar spent on the improvement of rivers and harbors cheapens freights, thereby increasing the profits of our farms and factories and aiding in the profitable growth of our internal and foreign commerce. These expenditures are solely in the interest of commerce and ought to appeal strongly to every citizen of the country, as cheap freights certainly enable him to buy cheaper and to sell at a greater profit. I have no means of arriving at the amount of our domestic commerce, which is colossal, but the total of our imports and exports in 1902 were $2,285,040,389, and for the past five years our exports to foreign countries have exceeded our imports by over $546,000,000 a year. In other words, the world has bought from us $546,000,000 per year more

than we have bought from it, which gives a splendid trade balance in our favor.

This fine showing is largely due to our wonderful transportation facilities by river, lake, rail, and ocean which enables us to compete on terms of vantage with every country in the world. Shall we keep that trade and hold onto our present commanding position? Undoubtedly it is our duty to do so, and there is no surer means than by continuing to better our transportation. The harbors on our sea and Gulf coast must be greatly enlarged to meet the growing size of ocean vessels; the ports on the Great Lakes and the rivers connecting them must be materially deepened and protected from storms; the great Columbia River must be opened by a system of locks and dams at a cost insignificant compared with the immense shipments from the richest wheat fields on the earth which will float to the Pacific on its bosom; the Ohio, that splendid stream which flows for 900 miles through the garden spot of America, must be given a good boating stage at all seasons, and the same must be done for its great tributaries, the Tennessee and the Cumberland, and innumerable other works of lesser magnitude, but of the greatest importance to their respective localities, must be provided for. All these things require a vast sum of money.

The projects before the Rivers and Harbors Committee when the last bill was adopted, which had been surveyed and reported on by the Engineer Department, called for an expenditure of over $300,000,000, and there was merit in everyone of these projects, while the majority of them were of great necessity. That bill appropriated nearly $27,000,000 cash, and authorized continuing contracts for about $37,000,000, making a total of $64,000,000, and leaving the remaining $236,000,000 unprovided for. Since then completed surveys increase the amount, and when the next bill is framed we will again be urged to adopt and provide for projects costing in excess of $300,000,000. How is that to be done if the present niggardly policy is pursued? For the past ten years, as previously shown, our expenditures for rivers and harbors have averaged $17,865,615 annually, and if that rate is maintained it would require about seventeen years to provide for projects now being urged upon us, without any allowance for maintenance of existing works and nothing for future developments.

This convention should emphasize these facts and should call in stentorian tones for a considerable increase in river and harbor appropriations. No mere pittance will suffice. The bill should carry at least $40,000,000 in cash and continuing contracts of $60,000,000 additional. And there should be a bill of this size every two years, which would result in giving us about $50,000,000 a year. Even that would place us hopelessly behind the Post-Office, the Army, the Navy, and the Pension Departments, but with that sum annually we might in a few years be in a fairly good condition.

There has been some suggestion in the press that Congress may not pass a river and harbor bill at the coming session. I can not believe such a thing is seriously contemplated, but this convention should utter its vehement protest and appeal to all true friends of American commerce to prevent such a great disaster as the failure of another river and harbor bill.

In conclusion, permit me to say that in my opinion the only possible plan for us to secure an increase in our levee appropriations is to secure an increase in the general bill. If we are to have another

$64,000,000, it is out of the question for levees to expect to receive over $1,000,000 a year. Let us then bend all our energies to secure a bill carrying at least $100,000,000 for rivers and harbors, and if successful in that we can confidently expect $2,500,000 to $3,000,000 per year for our levees.

The Subjugation of the Mississippi.

[By Hon. R. S. Taylor, member of the Mississippi River Commission.]

Mr. chairman and gentlemen of the convention: You are a serious-minded body of men. You have assembled on serious business. I am proposing to make you a serious speech. It will not be inappropriate, therefore, to begin my remarks with a quotation from the sacred Scriptures of a few words contained in the twenty-eighth verse of the first chapter of Genesis: "Be fruitful, and multiply, and replenish the earth and subdue it."

Think of it! This great rolling globe, with its trackless forests, its unsailed seas, its impassable rivers, mountains, and deserts, its burning heat, chilling cold, storms, beasts, and countless perils on the one hand, and the naked, new-created pigmy, man, on the other. Was his Maker mocking him that He bid him subdue the earth?

How feebly that conquest began; how slow its progress through tedious ages; how at last it spread and rose and swept over land and sea; how glorious has been its march in the recent centuries, and yet how much of its complete fulfillment remains unaccomplished. To subdue the earth, its soil, elements, and forces in every land and make all things on it tributary to the happiness of man is still the high destiny of the race. In this vast programme of conquest a prominent place belongs to the subjugation of the Mississippi River. I consider, therefore, that as a Mississippi River Commissioner I have the warrant, not only of the office which I hold, but of the direct command of Almighty God.

Consider for a moment what the subjugation of this particular part of the earth means. There was a time when an arm of the sea extended from the Gulf of Mexico to the highlands above Cairo, Ill. It received the drainage of all the lands lying between the Alleghenies and the Rocky Mountains. The detritus brought down by the rivers which emptied into it—the Tennessee, Cumberland, Ohio, upper Mississippi, Missouri, St. Francis, Arkansas, and Red—filled it up and made the present alluvial basin. That basin contains something over 29,000 square miles of the richest land which nature knows how to compound. It is geological cream skimmed from a million square miles of earth's surface. It lies in the path of the great Gulf stream of the air which flows northeastward from the western borders of the Gulf of Mexico and distributes rain from Texas to Pennsylvania. It extends through nearly 600 miles of latitude and embraces three distinct belts, each adapted to the growth of a great staple—the northern third to corn, the middle third to cotton, and the southern third to sugar. There is nowhere else in the world so great area of such fertile land occupied by people so advanced in civilization and so well able to utilize its great possibilities for the good of the world.

In its natural state this whole area of 29,000 square miles was subject to overflow. A great flood reaches more than 50 feet above the low-water plane at Cairo. Passing downward it first pours over the west bank into the basin of the St. Francis, filling there an area of

6,700 square miles. Passing Memphis it takes possession of the Yazoo Basin on the east, 8,600 square miles in area. Then the Tensas Basin on the west, 5,300 square miles large. Below Red River it spreads out in huge fan shape, covering 10,000 square miles as it passes the final stage of its flow to the sea through the Atchafalaya and Pontchartrain basins. These five great subdivisions, with a number of smaller areas not named, make a grand total of 29,790 squares miles. I am speaking now of the overflows which occurred when the valley was in a state of nature, and would occur again if there were no protection against them. They filled the whole plain, from the hills on the east to the hills on the west. They restored the ancient estuary, 10 to 20 miles wide in its upper portions, 20 to 60 miles wide in its central parts, and more than 100 miles wide at the sea line. The waterway thus formed was so wide and the reservoir capacity of the area was so great that the floods did not reach a great height. When white men took possession of the ground where this city stands they found a high dry bank, rarely overflowed at all, and then only to a shallow depth. The reason was that a large part—probably more than half—of the flood discharge left the channel over the open west bank, which extended for 300 miles or more northward and found its way to the sea across the Atchafalaya country. To protect the small area first occupied was a simple matter. To see why this is so will require a moment's consideration of the Mississippi River's method of land building.

The water which flows in the channel of the Mississippi is at all times charged with sediment in greater or less quantity, consisting of sand and loam, part of which comes from far up the valley and part of which is eroded from the banks along the way, the amount of which is greatest at flood stages. The quantity of such sediment that flowing water can carry depends upon velocity of its flow. A diminution of that velocity compels it to drop part of its load. When the river overflows its bank the obstructions in the way of the escaping water retard its flow and so cause it to deposit sediment as it goes. This diminution of velocity is most effective to cause deposit immediately after the water leaves the channel. As a consequence, the overflowed area is built up most rapidly near the bank, and so the surface of the adjacent country slopes away from the river. At the present time this slope varies from 2 or 3 feet to as much as 8 or 10 in the first mile.

I never recur to this subject without renewed wonder at the vast results which nature accomplishes by the simplest of means. If you set on your table a tumblerful of Mississippi River water fresh from the flowing stream, you will have a deposit in its bottom, a mere film of mud, in a few minutes. In a few hours you will have half a teaspoonful of mud as thick as hotel cream. This whole alluvial valley has been built by the same process. Every spoonful of earth in it has been brought to the place where it rests by flowing water. It ceased to journey toward the sea, because the velocity of the water was insufficient to carry it farther. Since I began to speak, the river has carried through this city enough sediment to load a railroad train with dry soil.

The mills of the gods grind slow, but they grind exceeding small. They have ground the faces of the mountains and filled the gulfs of the sea with the dust thereof, that the sons of men may dwell in gardens and their children eat food.

But the early settlers at New Orleans had no time for such reveries as these. They found bordering the river a strip of dry, fertile land 2 or 3 miles wide, sloping gently back toward Lake Pontchartrain. At low water the river's surface was 8 or 10 feet below the top of the bank; at extreme flood not more than 1 or 2 feet above it. It was an easy matter to build a levee sufficient for protection against such overflow. An embankment along the river front 3 feet high, extending back laterally to the lowlands in the rear, was all that was necessary. There was such free discharge for the overflowing water into Lake Pontchartrain that no back levee was necessary. One in front and one on each side, diminishing in height to the swamp, was enough, and these so slight that the total cost of building them was little more than the cost of a fence.

It was within the power of each planter to protect himself and live on his own sunken island in the Mississippi sea. On this small scale, at the spot where we are assembled, the levee system had its beginning nearly two hundred years ago. The campaign of subjugation of the Mississippi River had commenced.

As the settlements increased the levees were extended both up and down the stream and on both sides. Each mile of embankment shut off so much of the overflow previously accustomed to escape over that portion of the bank, and so forced that much water back into the channel. As the embankments crept upstream year after year on both sides of the river, they shut off more and more of the overflow, and so progressively increased the volume going down the channel between them at flood stages. This made it necessary to raise the levees below higher and higher. And so they grew in two directions—upstream in length and up in the air in height.

By the time of the civil war the levees extended to the head of the Yazoo basin, a short distance below Memphis. They were insufficient in height and strength, and generally too near the bank for safety. During the war they were neglected, of course, and for several years after its close little headway was made toward their restoration. That work had been but partially accomplished when the flood of 1882, the greatest of record, wrought such havoc with them that the people of the valley were overwhelmed in despair. At that opportune moment the United States Government appeared on the scene, and with very different mien from that which it wore in the same region twenty years before. In place of the horrid front of war, it brought the extended hand of sympathy and help. The Mississippi River Commission, which had been organized in 1879, was then just ready to begin its practical work with an appropriation of $4,123,000 under its control. By the terms of the law it was required to expend the appropriation primarily and mainly for the improvement of the channel for navigation, but it immediately allotted $1,000,000 for the repair and building of levees.

This timely aid put hope into the hearts of the people. They took up the work themselves with renewed energy. There was then inaugurated a system of cooperation between the Government at Washington and the people of the valley, which has continued to this day with remarkable success and most beneficent results. The Commission let it be understood at the outset that, so far as was consistent with other considerations, it would help those who helped themselves. Under this stimulus the people rose to the occasion. They taxed them-

selves to the utmost of their means and borrowed to the limit of their credit. In the twenty years that have passed the Government has expended $17,000,000 on the levees, and the local governments and organizations have expended about $20,000,000.

The execution of the work has required a cooperation vastly more difficult than the mere mingling of funds. The expenditure of the appropriations made by Congress has been under the direction of officers of the Engineer Corps, detailed for that purpose by the Chief of Engineers, who have allowed the plans and recommendations of the Commission. These officers have made their own surveys, located their own lines, established their own grades, let their own contracts, and superintended their own work. The lines extend through six different States. Each of these has it own machinery for the raising and expenditure of money on levees. The State engineers make their own surveys, locate their own levees, let their own contracts, and superintend their own work. It was a vast and difficult field of cooperation. There was room in it for no end of disagreements, jealousies, and misunderstandings. That there has been perfect harmony of action and economical and effective expenditure of money is creditable to all who have had part in the practical work.

This fortunate experience has been due in large measure to the high ability and greatness of character of the chief engineers of the States and large levee districts. Among them two yet remain in the posts of usefulness which they have filled for more than twenty years. I need hardly say that I refer to Maj. H. B. Richardson, of Louisiana, and Maj. T. G. Dabney, of Mississippi.

During these later years the progress of levee extension has been a repetition on a larger scale of the early history which I have sketched. They have advanced from the lower reaches of the river upward in the same order in which they began. Their upward extension has cut off more and more of the former overflow, and so forced more and more water into the channel to be carried between banks to the sea. The necessary result has been to raise the flood level higher, and so make it necessary to build the levees higher. Within a few years the system has been approaching a complete continuity except at the spaces necessarily left open at the lower ends of the basins for the exit of surface drainage. It was impossible for those familiar with the subject not to look forward to the passing of the next great flood with extreme anxiety. What would happen? That flood has come and has gone, leaving behind it a record of mingled disaster and success. Upon the whole, it has demonstrated the feasibility and ultimate success of the levee system.

I will give you my reasons for this belief, and this, I beg to say, is the most important part of my message to-day. The flood of 1903 was not a final test, because the levee system is incomplete; but it was highly instructive as preliminary to a final test. The last great flood prior to the present year was in 1897. It was a little less in magnitude than the last one. In the interim the levees had been greatly improved in strength and extended a little. A large part of the extensions, however, were of deficient grade, particularly in the St. Francis Basin. It is a usual practice by the local levee authorities, in their anxiety to cover all the area possible in the construction of new levees, to build them first to a grade sufficient to withstand ordinary floods only, leaving to the future the work of raising them to meet

extraordinary floods like those of 1897 and 1903. This is, no doubt, a prudent course where the need is urgent and the resources limited.

The flood of 1897 (less in magnitude than that of 1903) broke the levees in 38 places; that of 1903 in 9 places, and of these 3 were breaks of small importance below the city of New Orleans. The total length of levee destroyed by crevasses in 1903 was about 3 miles; the length destroyed in 1897 was about 8 miles. Neither of these was a large loss out of a total length which existed of 1,400 miles.

The most important part of this study, however, relates to the area overflowed and the causes of the overflow. I have told you that the total area liable to overflow is about 29,000 square miles. This includes the whole land surface to the margin of the Gulf. A considerable portion of this is incapable of protection by levees. At the foot of each of the great basins an opening has to be left to permit the escape of surface water from the basin above. In time of flood the water enters these openings and backs up a number of miles over the lower part of the basin. This sort of overflow can be minimized by extending the levees downward as near to the foot of the basin as practicable, and there will ultimately be constructed some extension of the levees in all the basins for this purpose. It is necessary also, in making an estimate of the effectiveness of the present levee system, to exclude from consideration those areas which were overflowed because levees yet to be constructed as part of the system have not yet been built. With these facts in mind, the following figures are highly instructive: The total area overflowed in 1903 was 8,000 square miles, leaving 21,000 square miles of the alluvial basin free of inundation. If there had been no levees the whole valley would have been under water from hill to hill. Of the 8,000 square miles overflowed, 3,000 were overflowed by backwater in the manner that I have described, and 2,000 square miles were overflowed because the levees necessary to protect the area have not yet been built. That makes 5,000 square miles of overflow which the present levee system was, in the nature of things, ineffective to prevent. This leaves 3,000 square miles of overflow which the existing levees would have prevented if there had been no breaks.

From what I have said it appears that out of the whole 29,000 square miles in the valley, 3,000 square miles were overflowed by backwater. This amount might be reduced somewhat by extensions of the levees, but for my present purpose I may assume that this much overflow is inevitable under the most perfect levee system. That leaves 26,000 square miles which can be protected if the levee system is capable of affording perfect protection, and by that standard it is fair to measure the effectiveness of the present system. I may say, therefore, that out of a total of 26,000 square miles which a perfected levee system would be expected to protect, 3,000 square miles were overflowed in 1903. That is less than one-eighth of the exposed area. The existing levees, therefore, protected seven-eighths of the land capable of protection by a completed system carrying the whole flood to the sea without a break. If I call that 12½ per cent, I may say that the existing system accomplished, in the flood of 1903, 87½ per cent of success out of a possible 100.

I submit these figures to you, gentlemen, as a demonstration of the magnificent efficiency and success of the levee system.

But this statement does not do full justice to the levees. The value

of a police force is not confined to the number of hours in a year during which it is engaged in arresting or chasing down criminals. Its main value consists in the security which its presence affords through all the year. In like manner, the value of a levee system is not confined to the years of great floods. It covers all the years. It consists in the security which it affords from year to year all over the valley against destructive overflow. That sense of security which invites people to the country and makes industry and enterprise possible and life enjoyable is the real benefit which accrues and is to accrue from a levee system. Therefore, to ascertain the true worth of a system, you must spread the protection which it actually affords against a great flood over all the intervening time. The flood of 1903 was the first one of magnitude since 1897, a period of five years.

The history of the past shows that such floods rarely come more frequently than once in five years. I am confident that the levees as they stand to-day, with the incomplete lines finished up, and without the enlargements and higher grades which are in contemplation, would protect the valley through four years out of five.

If I spread 12½ per cent over five years, so as to obtain an average, not only of area, but of time, it follows that, taking into account the past five years, the levees have done 97½ per cent of useful work out of a possible 100.

If anyone has any doubt in his mind of the value of a levee system, I ask him to ponder these figures.

There is another set of facts of the highest significance in regard to the value of a levee system. They are the results which have followed the development of the present system. These results show what occurs in the alluvial valley as confidence is built up in the effectiveness and security of protection from overflow. I have seen property advance all over the alluvial valley, in some places 100 per cent, in some places 200 per cent, in some places 300 per cent, since the people began to entertain a feeling of confidence in security against overflow. This development has reached every branch of business and every interest in life. Cultivated farms, homes, mills, banks, railroads, and every adjunct of prosperous and progressive society have multiplied amazingly.

And this is only the beginning of what is possible. Less than half of the tillable land in the valley has been brought under cultivation. It is capable of sustaining a population two, three, or four times that which it has at present, and this without counting on large manufacturing cities. Is it to be imagined that such a country, with such resources, where the cotton plant is a small tree and the corn field is a miniature forest, can be given over to ruin by the abandonment of a system which has already produced such magnificent results? It seems to me that there is only one question about it which the people of the valley or the people of the United States can ask, and that is, is there any reason to doubt the possibility of going forward with the work so well begun and so far advanced to final and complete success?

I think I do not underestimate the magnitude of the undertaking. It is appalling to contemplate when you turn your thoughts to that phase of it. I have traveled down the river on the top of a great flood. The water inside of the levees licked the earthen walls that held it to within a few inches of their tops. Outside the fields lay ten or fifteen feet below. Our steamboat seemed to float in air. Between

the levees the great river—a mile wide and 100 feet deep—rolled silent, swift, terrible. At such a time I have seen the levee lined with men for miles, topping the embankment with bags of earth or boards set on edge and backed with earth to raise it a few inches higher, or planking the inside of the levee to save it from wave-wash. I have known such a line to extend with scarcely a break for 100 miles. There are few situations in life where human nature is put under such strain. I need not describe it to you, old flood fighters; I could not adequately describe it to anyone else.

I have seen a crevasse almost at the instant of its occurrence, the water rushing through the breach like a cataract and leaping and bounding in great waves across the fields; the negro women fleeing from their cabins, their children and themselves loaded with their simple household effects, and their husbands riding like mad from the fields on mules hurriedly unfastened from the plow—all seeking the safety of the levee; for, curiously enough, the levee is at once the line of danger and the line of safety. When a crevasse occurs the water drops a little inside the levee, and its unbroken length becomes at once a place of refuge.

And yet, with all the suddenness and fury of a crevasse, it is rarely that lives are lost. Indeed, I have never known nor heard of the loss of a life in the immediate path of the rushing water. During a continued overflow persons are drowned by the capsizing of skiffs and the like, but they are rarely caught in the rush of the outburst. It is to remembered that at such a time the outflow of water quickly fills up the adjacent country and so drowns itself, as I may say. It builds up a lake extending for some miles in all directions, through which there is a slow and quiet flow toward the lower levels.

A little steamboat belonging to the Government and under the charge of the Commission once went through a crevasse. She was engaged in measuring the discharge from the river, and, venturing a little too near, went through like a shot. She was in smooth water in a few minutes and made her way safely across the fields and swamps and bayous of the Atchafalaya basin and home by way of the Gulf.

Life in the alluvial region would hardly be tolerable if these dreadful experiences were frequent or continuous in anyone locality. But they are not. During three years out of five they do not occur anywhere, and during the years of greatest disaster they are confined to a few places. At the same time it must be said that the undertaking to carry the great floods of the Mississippi to the sea between embankments of earth high above the fields and homes of the inhabitants, above schoolhouses, churches, cities, railroads, factories—everything that enters into the life of a civilized and advancing people—is one fit to frighten the man who, as I said, just looks at that side of it.

It does frighten people. In a recent publication a writer of ability and learning, an engineer of high acquirements, has declared that the levee system is a struggle with forces of nature too mighty for the puny strength of man. He points out that the governing purpose of the river is still, as it has been for ages past, to fill up the alluvial basin; that its overflows are its method of carrying out that purpose; that they distribute over the general surface the material brought down from the upper valley; that that material will continue to come, levees or no levees, and "what," he asks, "is to be done with it?" "It is impossible," he says, "for the river to carry it all to the Gulf;

it will be strewed along the way, to the obstruction and damming up of the channel, the elevation of the river bed, and the increase of flood heights, necessarily resulting in increase of levee heights until the river will fall over into the fields."

His first deduction from these facts is that we have taken possession of the alluvial valley of the Mississippi prematurely; that it is an unfinished part of the world, not ready for human occupation. The first logical deduction from this view—which, however, he does not state—is that the thing for us to do is to move out and let the river have undisturbed possession for a few million years. The second—which also he does not state—is that a convention of divines—they ought to be thoroughly orthodox, so as to be able to tinker with the Scriptures by authority—ought to be called to give us a new reading of the Book of Genesis. The passage I have quoted should be amended to read: "Subdue the earth, except the Mississippi Valley below Cairo; that is reserved until further orders."

This same writer assumes, however, that it is not in the nature of men who live under the Stars and Stripes to give up a fight in that way, and he proceeds to recommend an elaborate system of outlets as the only solution of the problem.

It is not strange that in the face of the tremendous cost, difficulty, and hazards involved in the levee system men should look anxiously in all directions for some way out. Nor is it strange that in this search a man's first thought should be outlets to let off the surplus water by some shorter route to the sea. What could be more obvious?

This could be done with immediate advantage in lowering flood heights in some parts of the river. An outlet could be made across the narrow space which separates the river from Lake Pontchartrain above this city, which would immediately lower the flood line through this city a foot or two or more, according to the capacity of the outlet. As many more as you like could be made through the west bank between this city and Red River, to discharge into and across the Atchafalaya Basin. The whole river could probably be diverted from its present channel in that way.

But such outflows would be attended by consequences which a prudent man is bound to consider. As I have already stated, the capacity of the water of the Mississippi to carry sediment depends on the velocity of its flow. If you turn it out into a quiet field it quickly drops its load. If we should make an outlet into a shallow place like Lake Pontchartrain it would soon be filled up; bars would appear above the surface; willows would take possession of them; the whole area would become a marsh intersected by tortuous channels. This is what would take place if the outlet were made to allow the discharge of a relatively small part of the whole volume of the river. The obstacles which the outlet would thus speedily build up in its own path would rapidly diminish its capacity and its usefulness.

In the meantime the river below the outlet, weakened by the reduction of its volume, would have less power to transport sediment than it had before; not merely less total power, but less power relatively to its load. As a result, the deposit of sediment would increase from the outlet to the sea, to the impairment of the discharging capacity of the channel and the gradual restoration of the flood heights which prevailed before the outlet was made. The river has tried this experiment itself. There are many depressions in its banks which mark

former channels of outflow which have been choked up by the luxuriant growth that takes possession of all vacant spots in this valley, so that they have ceased to discharge any considerable volume of water. At the passes it divides into a number of channels which lead out to the Gulf. To that point the river is deep. From that point out the channels are shallow. If all the passes were shut up but one, that would soon become a deep channel. But it would not last. It would proceed to build a bar at its mouth and then cut a multiplicity of channels through it, exactly as it did when it made the present ones.

If these results of subdividing a channel would be remote, so that the relief obtained by an outlet would last a long time, say half a century, and the injury to the channel below postponed for a like time, it would be worth while, in my opinion, to consider the subject. But that is not the case. These actions are rapid. I have known vertical fills of from 20 to 30 feet to be produced in two or three seasons by contraction works in Blum Point and Lake Providence reaches. The consequences which I have described would follow in very few years.

There is a kind of outlet which might be employed on the lower part of the river with advantage, in my opinion. It would be an outlet to take off a carefully controlled discharge from the very top of an extreme flood and no more. Its construction would be something like this: We could cut a notch in the bank to a line say 1 foot below the surface of an extreme flood, such as we had last spring. It should be, I should say, a mile or 2 miles wide. The bank in front should be securely revetted. The surface of the gap for 1,000 feet or more, if necessary, from the margin should be paved with stone. An adequate path for the outflow should be opened to the lowlands, where there would be ample discharge for the water to the sea through bayous or swamps.

Such an opening would not be an outlet in the ordinary sense of the word. It would take no water from the river except at extreme high stages, and then from the very top of the stream. I should call it a "spillway" or "wasteweir" rather than an outlet. Three such spillways between Red River and New Orleans would reduce flood heights at this city very materially. They would be followed by the ordinary effect of an ordinary outlet on the channel below them in some degree. They might make necessary some additional work at the mouth of the river to preserve the channel depth there. But these results would develop slowly and could be seen coming in time to prevent them by diminution or closure of the spillways. They would be costly not only to construct, but to maintain. The water would flow through them only at intervals—sometimes of a number of years. The pathways leading from them would have to be kept clear by constant attention. The activity of nature's forces in this region is such that they would completely choke up such a path with rank growth in a single season of neglect.

The construction of such spillways would be practicable at points below Red River. Above that hardly so, although one can imagine the closure of Old River at two places and the cutting of a channel down the Tensas across Old River between its two dams into the Atchafalaya Basin as an outlet for spillways above the Red.

But all such schemes have no practical value at this time. The outlet theory as usually held, which proposes lateral channels taking off water at ordinary or ordinarily high stages, is a delusion. I deny that

it is in accord with the river's own methods and suggestions. If it were, the river would have made for itself a plurality of channels ages ago. It has had time enough and room enough. All the space from bluff to bluff has been its. It has wallowed over that space from side to side again and again. The fact that it has made itself one great channel, and only one, when it could have made a dozen is conclusive evidence that the law of its existence, the expression of its most effective energy, is concentration, not division. Only in the hour of its death, when its life as a river ends in the embrace of the sea, does it break into subdivided channels.

Its overflows mark the limitations of its natural energy. It overtops its banks to-day because it has not been able in the past to make itself a channel large enough to hold its floods. The levees supply what it has endeavored in vain to create for itself—banks to hold its floods. That they will introduce a great change in its regimen is proved. But they are not a contradiction of the natural tendencies of its own forces; on the contrary, they are in aid of them.

The question what is to become of the sediment which the river has heretofore deposited in the basins by its overflows is one to be thought of. I have thought of it long, whether with sound conclusions or not I do not know. But what I think is this: Very little of the sediment which enters the channel at Cairo goes to the Gulf by a single journey, or ever will. The river lays down its load and picks it up again over and over; scours in the bends and deposits at the crossings. It gets its freight to destination by many short hauls. The complete restraint of floods will increase the quantity of sediment to be transported in the channel. But the increase in the volume of the water will increase its carrying power in a greater ratio. The amount of sediment received at the upper end will not be increased, but the amount discharged at the lower end will be. The river will have more power than ever before, and will do more work. It will shift its bars downstream more rapidly, and in doing this it may develop new obstructions to navigation in the lower river and at the jetties. But none of these will be serious beyond practicable remedy.

I have been gravely informed a hundred times by persons who knew nothing about the subject that it was futile to attempt to prevent overflow by levees, because the effect of the concentration of the flood discharge is necessarily to raise the bottom of the river as fast as the tops of the levees are raised. I have often wondered how so many people get hold of that idea who have so few others. But a belief so widely entertained deserves consideration, and the fact, if it be one, is so important that the Mississippi River Commission has taken pains, by the application of all tests within its power, to get at the truth upon the subject.

One of the duties imposed on the Commission by the law by which it was created was to make a complete survey of the river. This has been done with the greatest care.

First, the river was fenced in with a series of triangulation lines, by which basal lines were fixed along its banks with the nicest accuracy. Then permanent bench marks were established on lines crossing the river every 3 miles, two bench marks on each side in each line. These were connected with the triangulation stations. Then soundings were taken on lines crossing the river at intervals of about a quarter of a mile, and numbering about 75 soundings to each line. All these

were referred to and connected with the bench marks. The results were embodied in maps, and records preserved in the office of the Commission. It was thus made possible to reproduce the river in every detail—every bank, bar, elevation, and depth—with photographic exactness, at any time in the future. This work was begun at the mouth of the river and completed to Cairo during the years 1881, 1882, and 1883. In 1895 and 1896 a resurvey was made of that part of the river lying between White River and Donaldsonville, La., a distance of 472 miles. Between those points the levees had been, not completely, but comparatively effective in confining the floods during the interim. The work was done by the same methods followed in the first survey, improved in point of exactness as far as possible. These two surveys afforded a basis of comparison, which, for the first time in the history of the Mississippi River or any other, so far as I know, furnished something approaching exact information on this subject. This comparison disclosed many local changes in the bed of the river. Bars and pools had moved downstream in many places, so that at the point where a bar was found twenty years ago there would be a deep pool, and vice versa. But as a whole there had been little change in the elevation or capacity of the channel, but that little was in the direction of deepening and enlargement, and not in the direction of filling up.

There is another fact which throws light on the question. It is this: A comparison of low-water elevation in reaches of the river which have been leveed for a number of years with efficiency enough to control the floods in substantial degree as they existed before the construction of the levees, and as they have existed since the construction of levees, shows that in those parts of the river the low-water plane has fallen. The evidence of that fact is as follows: No influence of levees has extended to Cairo to affect the low-water elevation there. At points below, where the floods have been confined by levees, something has affected the low-water plane to depress it below that at Cairo. If we take a series of low-water gauge readings from Cairo down, extending over several years before the building of the levees, and plot a line from them representing the average surface of the low water during that time, and then take another series from the same gauge extending over an equal number of years after the building of the levees along that part of the river, and plot an average low-water line by those readings, we find that where the levees were effective to confine the floods within the channel during the second period, the second low-water line sags below the first one. That means that in those parts of the river the low-water plane has fallen below its former elevation, and that signifies, it appears to me, that the bed of the river has been depressed to that extent.

I do not know that I can call these facts demonstrations. There are so many things that enter into the behavior of the Mississippi River that it is hard to make two sets of observations in which all the conditions shall be the same. But they are valid arguments. They tend to prove that the increase of the flood discharge within the banks by means of levees does not operate to fill up the bed, but, on the contrary, tends to scour it out.

I have long held this view from purely theoretical considerations, which I will briefly state. It is true that torrential streams flowing down steep slopes into flatter ones tend to fill up their own beds. The higher velocity in the upper reaches of the stream brings down heavy

material in the form of pebbles and sand, which the less velocity of the lower reaches is unable to transport. This heavier material, therefore, accumulates in the bed. The Mississippi River below Cairo is not such a stream. Its slopes do diminish downwardly, but very slightly. The levees do not, and will not, increase materially that variation of slope. They will not increase the flood slope as a whole. The floods will start at Cairo with the same, or substantially the same, elevation that they had before, and they will end in the same sea level. The water will have a higher velocity than it had before, because of its greater depth.

Under conditions existing heretofore it is the lighter rather than the heavier parts of the sediment that go over the bank in great floods. After complete levee closure there will be very little more heavy material to be moved than there was before, and there will be more power to move it. I suppose that, in strict sense, there is a little accumulation of material going on in the bed now, and always has been. In the process of filling up the Mississippi Gulf the fill began at the bottom, and since it reached sea level the river has risen with the land to its present elevation. But these are geological processes as slow as the erosion of mountains. I do not believe that if the levees were held intact from now on against all floods any elevation of the bed sufficient to be injurious would take place in hundreds of years.

I am aware of what is said about the Chinese rivers and their levees; of the extent to which they have been elevated, and the crevasses that have occurred and the loss of life that has been caused by them. But I do not know the facts in regard to these rivers which are necessary to make a comparison with the Mississippi and its levees--the soil, slope, depth, and other factors that affect the question. But the fact that those levees are, as I suppose, thousands of years old, is enough for me. In planning such works as these I believe in looking ahead, but not too far ahead. I reject outlets for the reason, among others, that such usefulness as they might have would be short lived, and I think that in such a matter twenty-five years is a short time. I am not afraid of filling up the channel in consequence of levees, because I do not believe that any injurious result in that direction would follow within hundreds of years, and that is far enough for me to look ahead.

To Overcome Legislative Difficulties.

[By Hon. James H. Berry, United States Senator from Arkansas.]

Mr. Chairman and Gentlemen of the Convention, I would be insensible to all that man holds most dear if I did not greatly appreciate the kind words uttered by your chairman. I came to this convention to receive and not to give instruction. I came here believing that the people who reside along the banks of the great Mississippi knew better than all others their needs and their demands, and to receive instruction at their hands and try with all the power that I have to carry out their will. I am not here to-day to discuss the importance of leveeing the Mississippi River. It is unnecessary that I should. There is no delegate to this convention who does not know that in a financial and commercial way there is no question which can or will come before the Congress of the United States which interests so many people in the South as that of leveeing the Mississippi River.

Of course, my fellow-citizens, I do not wish to be misunderstood in

saying that, because there are great questions which may come up affecting our political and social condition which rise high and far above every money consideration whatever. I do not allude to that. But I believe that more benefit will come to more people in the South from the leveeing of the Mississippi River than from any other project that it is possible to bring before the Government.

I want to say this, also, that I think the great object and purpose of this convention should be that each delegate should constitute himself a committee of one to try and convince the Congress of the United States that in appropriating this money for the leveeing of this great river they are serving the entire United States, and that it is not local to the South alone. I take it that these Southern delegates here to-day want no special privileges. They do not want this Government of ours to give anything to them that they won't concede to our brothers in every State of this Union. In asking the Government to give us aid for the leveeing of this great river I do not think that we are asking any special favors or special privileges. While, of course, great benefits will come to the people of the Southern States, yet there is not a State or Territory in this Union that will not be benefited by this appropriation. This is a national affair. This river touches the interests of everybody in every State throughout this land. Therefore, we ask nothing except that which I think we are entitled to have. In the distribution of the millions of dollars that are appropriated annually by this great Government, of course it is impossible that there could be anything like an equitable distribution in its expenditures throughout the entire nation. I want to say that of all the supply bills and the millions of dollars that go out annually, there is but one bill, and that is the rivers and harbors bill, under which the people of the South get anything that approaches an equitable distribution in the expenses. You take the great pension bill, which carries above $150,000,000. There is but a small portion of it that comes South. You take the millions that are expended on the construction of naval vessels; you take the supplies for the Army and Navy. There is very little of that money that comes South. You take the great sundry bill, carrying millions of dollars, including the Light-House Service and various matters, and a comparatively small part of it is ever expended in the South. Under the fortification bill, under every other bill, it is the same.

Now, gentlemen, understand that we are not complaining of this condition. It is a condition that can not be avoided. We have no right to complain. But I say that in answer to the proposition that is so often urged before Congress, that this money for the Mississippi River is simply being taken out of the Treasury of the United States for the benefit of the South alone. All that we ask in the distribution of this money and on other questions is fair play. But it has often been said that the South has not been fairly treated, even under the rivers and harbors bill, for reasons of local prejudice. I want to say that that is not true. I have been for twelve years on the Committee on Commerce in the United States Senate, and I have never seen any disposition whatever in a single member of that committee to discriminate against the South. Although Senator Frye and myself seldom agree upon any proposition that comes before the United States Senate, yet no truer friend to the people of the Mississippi Valley has ever served on that committee than its chairman, Senator William P. Frye.

I remember one time, when there was a great emergency, a million dollars was secured by his efforts, without which it could not have been secured. I was glad to hear that Judge Blanchard made this same statement last night.

Now, my fellow-citizens, I want to say another thing. I think sometimes our own people do not always appreciate the difficulties with which delegates in Congress have to contend.

One of these difficulties was alluded to by our chairman yesterday morning, and that is, that we have in our own midst a number of men who do not believe in the levee system, who contend that the outlet system affords the only true remedy, and who have practically opposed us in the past. For a number of years heretofore, whenever the rivers and harbors bill came up, we were confronted by some Member of Congress with some editorial from some newspaper saying that the levee system was a failure, and must be abandoned. Then we had to go to work and explain the best we could. That was one of the difficulties that confronted us always. Another difficulty was that Senators and Members representing the arid States of this Union always insisted that if we used Government money to levee the Mississippi River, that they were equally entitled to have Government money to build reservoirs to irrigate their land; or, to put it as they put it, if we had the power to appropriate money to keep water off the land, we had the same power to appropriate to put it on the land. But during the last session of Congress a bill was passed appropriating the entire proceeds of the sales of public lands in the arid States for the building of reservoirs in that section to irrigate those lands. Now those people are silenced, and I hope silenced forever, and I trust the time will never come again when a Tom Carter will arise to kill the rivers and harbors bill, to the great detriment and injury of the people.

There is another difficulty which has always confronted us, and it is the most serious of all—a difficulty which confronts us still. There are a large number of members of Congress in both Houses who have always insisted that the Congress of the United States, under the Constitution, had no power to appropriate money to protect private property.

I want to say to-day that every dollar that has ever been appropriated for levees on the Mississippi River has been appropriated upon the theory that it would benefit navigation, and we never dared to put it on the ground, up to this day, that it would benefit private landowners, though we knew, of course, that this was incidental to it.

But it seems to me, my fellow-citizens, that if we can appropriate public money to irrigate the lands in the Dakotas, Idaho, and Wyoming, that we ought to be able to appropriate it to protect from inundation the land of the Mississippi Valley. It occurs to me that whatever may have been the intention of those who made the Constitution of the United States, that this Government has so often and in so many cases appropriated public money for private purposes that the question has ceased to be a practical one. As far back as 1848 money was appropriated by the United States Government for the relief of the sufferers in Ireland. Only last year, I think, $1,000,000 was appropriated for the sufferers in the island of Martinique, a French province. We have appropriated money from time to time to pay for the elimination of diseases among cattle in Illinois and other States.

We have appropriated money for every conceivable private purpose of which you can think, and, in addition to that, as our chairman said yesterday, we are appropriating millions of dollars to-day to hold in subjection 8,000,000 or 10,000,000 people 8,000 miles away, under the false idea, I think, that it is necessary in order to civilize and Christianize them. If we can do that, my fellow-citizens, I think we can appropriate money to protect the people of the Mississippi Valley, who are already civilized and Christianized. [Applause.]

Now, these are the difficulties that we have had, but there are other difficulties which come in connection with the framing of a rivers and harbors bill.

This appropriation for the Mississippi Valley has always been done under the rivers and harbors bill, but while it has its objections in that way, I want to say to this convention that, in my candid judgment, if we ever undertake to cut loose from the rivers and harbors bill and try to pass a separate and direct appropriation to protect the lands along the Mississippi River, to do that, and that only, in my judgment we will fail.

I know what we would like to do, but I think the gentleman from Ohio yesterday gave us some idea of what we have to expect. If we should undertake to pass a bill alone distinct from the rivers and harbors bill, we would be met by the citizens of the Ohio Valley in Ohio, Pennsylvania, Illinois, and Kentucky with the statement that they, too, must have levee protection, and all the farmers living along the banks throughout the upper Missouri would come forward saying, "We can not permit that bill to pass unless our people are protected along the banks of the Missouri." We would have them from a hundred other rivers in the United States, and if we voted down their amendments they would vote down our bill.

Therefore, whether the idea prevails for Government control or whether it does not, that is disconnected with this question. In my candid opinion, the only way to get any appropriation for our levees is to get it under the rivers and harbors bill, because when that bill is once reported there are so many members of Congress interested in so many provisions of it that they have never been able to cut off the appropriation accorded the members for the Mississippi River.

These questions are the ones that have confronted us. As to whether in the future it is best to let the Government have control and charge of that great river, that is a question which we will meet, and better meet, when the proper time comes. To-day we want to stand united, act as a body and as one mind. To-day what we want is to increase the amount of the appropriation for levees for the Mississippi River.

Now that is all important. If we can get $2,000,000 more for the leveeing of the Mississippi River for next year it means much to the people of this great valley. We want to go forth from this convention as one man to every locality where the Mississippi River touches and bring to bear every possible legitimate influence and pressure that can be brought to bear upon members of Congress, and say if this Congress will give us $2,000,000 recommended by Mississippi River Commission at once, we will look after the balance of the money hereafter. That is what I call practical. I do not want this convention to go off on a question of Government control. I want money for the Mississippi River, and I want it from the General Government, and I want it bad, and I want it right now.

Now, I think that I have said all that is necessary to say. In stating these objections and these difficulties I hope no one will misunderstand me to say that it is I who raised these objections. They are objections that we have been compelled, and will be compelled in the future, to answer.

If it be permitted for me to speak of myself, I want to say that I have devoted more time and more labor to trying to secure money for the leveeing of the Mississippi River than for all other questions that I have ever considered since I have been in the Congress of the United States, and my hope has been and is that I may live to see the levees built so high, and so strong, and so permanent that every foot of land on both sides of the river will be made absolutely secure from overflow.

When I think of these objections that we have got to meet I think that this convention here is going to have a great influence. If we can secure the united cooperation of the States that lie along, or even touch the river, to say nothing of its tributaries; if we can get the influence of the delegation from Iowa, from Missouri, from Illinois, from Kentucky, Tennessee, Mississippi, Louisiana, and Arkansas—if we can get that, and then my friend from Ohio will bring his Ohio delegation, including Mr. Burton of Cleveland, I promise you we will get the $2,000,000, as I believe.

I have been greatly gratified at the large attendance at this convention. I have been delighted with the able speeches that have been made by gentlemen of the convention. But while this will have great influence, we will not stop here.

Congress is soon to reassemble. The question whether we will have a rivers and harbors bill is being raised. Therefore we want to unite every influence to overcome those objections and set aside, if it may be, those difficulties. They are great, my fellow-citizens. The difficulties which have confronted the South in the past have been great, and they remain great; but they are not obstacles which can not be surmounted. The South has met greater difficulties in the past and survived them. We came back in 1865 confronted by desolation everywhere. Our negroes were freed; our farms were destroyed; we were without stock and without farming utensils; we were without money and without credit. Desolation was in every part of the South, and in many places lone chimneys marked the places where had been peaceable and happy homes. My fellow-citizens, we went to work and built up these waste places. If we have not accomplished all that we hoped for, we have shown to the world that difficulties can not daunt us and misfortune can not overwhelm us. As it was said, and well said, by our chairman, we have no excuses to offer for the past. We have never seen the day or the hour when we regretted what we had done. We did that which we conceived to be our duty in the sight of God, and we stand by it. But while I say that, I say to those delegates from the Northern States to-day we have but one country and one flag. It is our country and our flag, and we hold him the truest patriot and the most deserving of his fellow-men who contributes most to the honor and glory of our common country. [Great applause.]

New York's Dependence upon the Valley's Prosperity.

[By Hon. Charles S. Fairchild, ex-Secretary of the United States Treasury Department.]

Mr. Chairman and gentlemen of the convention, you have heard the case stated amply and ably from many men since you have been

in this city. I am sure that all of us who have listened to the arguments and statistics here are profoundly impressed with the greatness of this question and with its vital importance to our great country as a whole. [Applause.] I, as one not familiar with this question when I came here, feel that as a citizen of the United States I have gained great benefit, and I am sure that from this convention will grow out great benefits in an educational way to the country at large.

Just see how our interests are bound together and why we should contribute one to the other. A week ago I was at my country home, which is in the State of New York, a little east of where you see Lake Ontario on that map. From the hills around my home the waters flow to the St. Lawrence, the Hudson, and the Susquehanna. A little west of where I live, and almost in sight of my house, the waters flow to the Mississippi. Therefore, in a sense, we at my home are contributors to your injuries, and so far as we are contributors to your injuries, certainly we are in honor bound to do what we can to repair them. [Great applause.]

We also in our great State of New York and in our great city of New York are immensely dependent upon your prosperity here. We study with great care and with great interest, and sometimes with great anxiety, the condition of your cotton crop. We wish to know every year what your fertile lands are to contribute toward our balance of trade, and when we see a bad condition here in regard to your great crops we know that it threatens bad conditions to us in regard to all our interests. Therefore we are bound to contribute to you, because you contribute to us. [Applause.]

I am sure that wherever this question is understood, that wherever a man is actuated by unselfish patriotism, he wishes to see this great valley of the Mississippi cared for in the best way possible. [Applause.] What that is it is for the experts to say, but whatever the experts agree upon, that we should all stand behind and promote. [Applause.] I was vastly interested and instructed by that luminous paper which Judge Taylor read to-day, and I felt when listening to him that I was entitled to a little of your gratitude. Some months ago Judge Taylor was very ill, and I had a letter from a newspaper in Indiana telling me that he was very ill, and knowing that I knew Judge Taylor so well and had been associated with him in very important affairs, they asked me to write my opinion of Judge Taylor in order that it might be published with his obituary. [Laughter.] I said: "No, no; I will not give Judge Taylor up yet," and I tell you I believe that through the mind cure I contributed to his recovery [applause], and in doing so I have contributed to the well-being of my country, I am sure. [Applause.]

Now, gentlemen, the Federal Government, as I have said, is doing much in all directions. It now has taken up the subject of irrigation, giving as an excuse for the expenditure of that amount of money the benefit to the property of the United States which belongs to it specifically, and also giving as a reason the great benefits that will come to the country from the great power of the Federal Government taking hold and promoting the general interests by apparently promoting some rather local and peculiar interests. But our Government did the same thing in other ways long before. It gave up its lands to help build the great transcontinental railway, in order that our whole country might receive benefit therefrom. It has done various other

things, and this which it has done and is doing and will be called upon to do with regard to the great Mississippi River stands, in my opinion, on as high a ground, if not higher, than any of the other causes which have called for its assistance. [Great applause.]

We are spending, as you have heard, vast sums of money to extend the power and empire of our country over the world; we are going to expend great sums of money in building the Isthmian Canal, and yet it seems to me that the benefits that are to come from making perfectly secure and at the disposal of the country this great Mississippi Valley outweigh in importance any of the subjects that I have mentioned. [Applause.]

I came here not to advocate plans, not to take part in your deliberations from the point of a person thoroughly understanding the technicalities of this subject. I was in the presence of too much knowledge and too much skill to permit me to do that. I simply came here to express my good will and hearty sympathy as a citizen of this great country and a person interested in every way in her prosperity and development. [Applause.] That I give to this Mississippi Levee Convention, and I thank you, gentlemen, for having permitted me to be one of so important and so patriotic a body as this which I see before me. [Great applause.]

National Scope of the Mississippi Problem.

[By Richard H. Edmonds.]

Mr. Chairman and gentlemen of the convention, the Mississippi River is our greatest national economic problem. Recall the facts which influenced Thomas Jefferson to further the purchase of Louisiana one hundred years ago, and we are impressed with the importance of the Mississippi as a factor in making this nation. Had not Jefferson permitted practical statesmanship to override political theory this river might have been the western boundary of the United States, with the territory between it and the Pacific occupied by a people hostile to American institutions, and able to levy at the New Orleans outlet burdens even more grievous than those which have been imposed through national neglect in failing to render the navigation of the river to the Gulf safe and sure, and to protect millions of persons and hundreds of millions of property from disastrous overflows.

The people of the whole country are inclined to think of the Mississippi River problem as a purely local matter in which only a few southern States are directly interested, and a few western States indirectly. They are inclined to forget that to the vast coal and iron interests of Pittsburg, to the oil regions of West Virginia, and to the grain fields of the far West and Northwest, the proper improvement of the Mississippi River is alike of vital concern. This vast river, draining the richest territory of earth, is the nation's heritage, not the South's nor the West's, and its control is the nation's responsibility. That it should ever have been regarded as a State, or even as a sectional, problem is incomprehensible.

National from the earliest days of the Republic, the Mississippi is more national to-day than ever before, and with the eventual opening of a waterway through the Isthmus it is destined to become still more national. Fifty years ago Matthew F. Maury, the great pioneer of

American expansion through the application of science to wind and waves, pathfinder of the seas, prophet of the submarine cable, planner of the Weather Bureau, firm believer in a great navy and a great commercial marine, standing midway between the time when, as he expressed it, "the free navigation of the Mississippi River was a question of deep and absorbing political interest to us," and the present time, when the safe navigation of the Mississippi is a question of vital economic interest to us, vividly sketched the situation.

"The Mississippi," said he, "takes its rise near the parallel of 50° north latitude, where the climates are suited to the growth of barley, wheat, and the hardy cereal grains. The river runs south, crossing parallels of latitude, and changing with every mile its climate and the character or quality of the great agricultural staples which are produced on its banks.

"Having left behind it the regions for peltries, wheat, and corn, for hemp and tobacco, for pulse, apples, whisky, oil, and cotton, and having crossed the pastoral lands for hogs, horses, and cattle, it reaches, near the latitude of 30°, the northern verge of the sugar cane.

"Thence expanding into the Gulf, with all these staples upon its bosom, to be exchanged for the produce of other climes and latitudes, it passes on to Key West and the Tortugas, and there at that commercial gateway of the ocean, which opens out upon the Tropic of Cancer, it delivers up to the winds and the waves of the sea for the distant markets the fruits of its teeming soil and multitudinous climes.

"From the Gulf of Mexico all the great commercial markets of the world are downhill. A vessel bound from the Gulf to Europe places herself in the current of the Gulf Stream and drifts along with it at the rate, for part of the way, of 80 to 100 miles a day. If her destination be Rio, or India, or California, her course is the same as far north as the Island of Bermuda.

"And when there shall be established a commercial thoroughfare across the Isthmus the trade winds of the Pacific will place China, India, and all the islands of that ocean downhill also from this sea of ours. In that case the whole of Europe must pass by our very doors on the great highway to the markets both of the East and West Indies."

Again and again Maury dwelt upon the Mississippi as a most potent factor in the commerce of the Gulf of Mexico and the Caribbean Sea, which he christened "The Mediterranean of the West," and the necessity for the energies of the United States in commerce to find an outlet across the Isthmus. In a spirit of prophecy he said:

"From all this we are led to the conclusion that the time is rapidly approaching, if it has not already arrived, when the Atlantic and Pacific must join hands across the Isthmus. We have shown that there is no sea in the world which is possessed of such importance as this southern sea of ours; that with its succession of harvests there is from some one or other of its river basins a crop always on the way to market; that it has for back country a continent at the north and another at the south, and a world both to the east and the west. We have shown how it is contiguous to the two first and convenient to them all. The three great outlets of commerce, the Delta of the Mississippi, the mouths of the Hudson and the Amazon, are all within 2,000 miles—ten days' sail—of Darien. It is a barrier that separates us from the markets of 600,000,000 people—three-fourths of the population of the earth. Break it down, therefore, and this country is placed midway between

Europe and Asia; this sea becomes the center of the world and the focus of the world's commerce. This is a highway that will give vent to commerce, scope to energy, and range to enterprise, which in a few years hence will make gay with steam and canvas parts of the ocean that are now unfrequented and almost unknown. Old channels of trade will be broken up and new ones opened. We desire to see our own country the standard bearer in this great work."

Maury recognized, too, from the standpoint of the practical scientist, what the dwellers in the lower Mississippi Valley had a right to expect from the people of the whole country. He said:

"The drowned lands of the Mississippi Valley have been ceded to the States in which they lie, upon the condition that those States in reclaiming them will confine the river within its banks.

"The reclamation of these lands would improve the climate of a vast region of country and make it much more salubrious; it would add vastly to the wealth of those States by giving value to the lands, and greatly increase their commercial resources by bringing immense regions of these vacant lands under cultivation, and it would also vastly improve the navigation of the river.

"An object of so much importance to the health and prosperity of so many people in so many States is certainly worth looking after, and the work, when done, should be done in the most thorough and effective manner.

"Therefore, let us pray Congress for the appointment of an engineer who shall plan the work, and for the enactment of a statute requiring the States to have the work done according to that plan.

"This work is to last for all time. Suppose, therefore, merely for the sake of an illustration, that one of the States above Louisiana should be unfortunate in the adoption of a plan; that after having let the work, accepted it and parted with the lands, experience should prove the plan to be bad or the work to be useless. Louisiana, then, is overflowed in spite of herself, and her works, which we will suppose were really sufficient, are thus in danger of being rendered of no avail.

"The prosperity of the valley is to be greatly affected by this work of embankment, drainage, and reclamation, and therefore the best talents that the country affords should be employed to direct it."

These things were said when the total population of the United States was but 23,000,000, the value of our agricultural products but $1,326,700,000, and the value of our manufactured products $1,013,340,000. These truths have become more telling with the passing years, and are emphasized by the facts of to-day. Using, for purposes of uniformity, the figures for the year 1900, although later ones in some lines are available, what is the situation?

The Mississippi drains an area of 1,250,000 square miles, equal to 41 per cent of the land surface of the United States. Its waters and its tributaries drain the whole of 10 and parts of 22 States and Territories, having a combined land area of 2,107,550 square miles, or more than 70 per cent of the total of the country. The shortest description of this area may be given by naming the areas not included in it in whole or in part. These are New England, New Jersey, Delaware, South Carolina, Florida, Arizona, Utah, Idaho, California, Nevada, Oregon, and Washington, all of which, however, depend or will depend for their prosperity upon the prosperity of the States in touch with the Mississippi.

In the great area embraced within the 32 States drained in whole or

in part by the Mississippi and its tributaries there is a population of 62,166,099, nearly 82 per cent of the total population of the country; there are 374,313,897 acres of improved lands, or 90 per cent of the total improved acreage of the country, and 162,506 miles of railroad, or 83 per cent of the total. In the last census year this area produced $4,154,233,789 from agriculture, or 88 per cent of the total for the whole country, and $9,850,075,296 in manufactures, or 75 per cent of the total. The value of its agricultural products was more than three times the value of the total for the United States in 1850, and the value of its manufactured products more than nine times the value for the country in 1850.

It is true that the greater portion of several States, such as New York, Pennsylvania, Maryland, North Carolina, Georgia, Alabama, Texas, and Michigan, lie outside the actual drainage basin of the Mississippi, but the fact does not in any way lessen the supreme importance to these States as a whole of this great question. If we would rightly measure the importance of the Mississippi River problem, we must rightly comprehend the magnitude of the interests involved, present and to come. In this vast territory directly concerned in the proper handling of the Mississippi River—a territory of over 2,000,000 square miles of land surface—the total production in the last census year was, of wheat 571,701,154 bushels, or 85 per cent of the total for the whole country; of corn 2,617,409,198 bushels, or 98 per cent of the total; of cotton 8,591,391 bales, or 90 per cent of the total; of tobacco 823,247,901 pounds, or 94 per cent of the total; of hay and forage 71,152,786 tons, or 84 per cent of the total; of coal 266,150,899 short tons, or 98 per cent of the total; of iron ore 27,177,729 long tons, or 98 per cent of the total; of spelter 115,627 short tons, or 94 per cent of the total; of lead 139,835 short tons, or 60 per cent of the total, and of petroleum 59,263,220 barrels, or 93 per cent of the total. This area, with its preponderating power in agriculture and manufactures, produced all the iron ore of the country except the 31,185 tons of Connecticut and Massachusetts, 334,247 tons of New Jersey, and a bit of Nevada and Utah; all of the petroleum except the 4,099,484 barrels of California and all of the coal except the 2,474,093 tons of Washington, 1,147,027 tons of Utah, 171,708 tons of California, 58,864 tons of Oregon, and 10 tons of Idaho.

This showing may be summarized in the following table:

	United States.	Mississippi area.	Percentage of total in in Mississippi area.
Population	75,994,575	62,166,099	82
Area.....square miles..	2,970,230	2,107,550	70
Improved acreage	414,498,487	374,313,897	90
Timber acreage	32,222,097	23,748,801	73
Railroad mileage	194,321	162,506	83
Farm products	$4,717,069,973	$4,154,233,789	88
Manufactures	$13,010,036,514	$9,850,075,296	75
Wheat.....bushels..	658,534,252	571,701,154	85
Corn.....do....	2,666,324,370	2,617,409,198	98
Cotton.....bales....	9,534,707	8,591,391	90
Tobacco.....pounds..	868,112,865	823,247,901	94
Hay, forage.....tons..	84,010,815	71,152,786	84
Coal.....do....	269,881,827	266,150,899	98
Iron ore.....do....	27,553,161	27,177,729	98
Spelter.....do....	123,886	115,627	94
Lead.....do....	230,090	139,835	60
Petroleum.....barrels..	63,362,704	59,263,220	93

Such is the exhibit of to-day of this vast contributor to the wealth of the United States. Is it not sufficient to justify and to insure action by the legislative representatives of the people of the United States for the accomplishment of a task which the States, acting independentlly or collectively, but without the systematic plan alone possible under Federal auspices, can never perform effectively?

The necessity that this work be done promptly and on the most comprehensive plan is pressing to-day. What will it involve if it be deferred for another fifty years, in which time, if the population of the United States should increase at the rate of the past fifty years, we shall number 244,000,000 people? Or let us look at it from another standpoint.

The six New England States, whose wonderful energy and enterprise are adding vastly to the national wealth year by year, though almost absolutely dependent upon this Mississippi area for the supplies of raw material for industry and even for food, have an area of 61,973 square miles, and a population of 5,592,017, or 90 persons to the square mile. But four States touched by Mississippi waters—Maryland, with 120.5 persons to the square mile; New York, with 152.6; Ohio, with 102.2, and Pennsylvania, with 140.1—have a density equal to that of New England.

When the Mississippi area equals New England in density, as it inevitably will, this region will have a population of 189,679,500. It would seem a wild dream to anticipate the possibility of this coming about within the next half century, and yet so marvelous is the growth of our population that even now we shall add in the next ten years a population almost equal to that of the whole South at present. With nearly 80,000,000 inhabitants now, sure to be at least 100,000,000 ten years hence, the mind is staggered as we attempt in sober thought to measure the tremendous advance of a nation which is adding 2,000,000 people to its population every year, rapidly increasing to still greater figures. At the rate of 2,000,000 a year the next half century would add 100,000,000 to our population, but we know that instead of 2,000,000 we shall soon be adding 3,000,000 and then 4,000,000 a year. Fifty years ago New England, possessing practically none of the natural resources yet to be developed in the Mississippi area, had but 44 persons to the square mile.

Most of the lumbering operations, and it is to be hoped most of the timber preservation, of the future are to be in the Mississippi area. Most of the mineral development is to occur there. The law of the arts and sciences seeking to get as close as possible to the raw material for industry is to be most thoroughly manifested there. The bulk of the railroad building, as far as extension of mileage is concerned, is to be done there, and it is not unreasonable to believe that the child of to-day will live to see the time when this area will have, instead of 1 mile of railroad for every 13 square miles of territory, at least 1 mile of railroad for every 4.6 square miles of territory, as Ohio now has. This would give 458,163 miles, or more than twice the present mileage of the whole country. The great proportion of increase in improved acreage is to take place in this territory, with the expansion of artificial irrigation, the enlargement of transportation facilities, and the increase in population. With such an increase in population, is it not certain that agricultural and manufacturing progress must be proportionately great? If so, then within fifty years this area will annually

produce 1,700,000,000 bushels of wheat, 8,000,000,000 bushels of corn, with a total value of all agricultural products of $12,500,000,000, and of manufactures of $40,000,000,000, basing these estimates upon the present ratio of production to population, even though we know that production has been steadily increasing more rapidly than population.

These estimates may seem extravagant. But are they? We must bear in mind that human ingenuity in the invention of labor-saving machinery has by no means reached its limit, and that our people have only begun to touch the markets of the world outside our own land. We have had such prodigal gifts from nature in this country that our methods of agriculture are really primitive in comparison with what they will be within a few years with the application of science to farming, with the utilization of wastes, with proper economy in handling mineral riches, with the preservation of timber supplies, and with the reclamation for agriculture of millions of acres of rich land now in bog or swamp.

Are these estimates as extravagant as would have seemed predictions made twenty years ago of what has been accomplished in material advancement in that time? Who would have dared in 1880, when our total output of bituminous coal was 42,000,000 tons, to have predicted that in 1903 it would be nearly 300,000,000 tons? Who would have dared to predict at that time that the production of pig iron of 3,800,000 tons would grow by 1903 to 18,000,000 tons? And yet these things have come about. In 1880 the United States had 50,000,000 inhabitants; we now have 80,000,000, and ten years hence we shall have very nearly, if not quite, 100,000,000. The potentiality of these 100,000,000 will not simply be double that of the 50,000,000 in 1880. In productive power, in the magnitude of financial and commercial operations, each unit in 1913 will represent more than double the capacity of each in 1880. Measured in this way, our population ten years hence will have a potentiality equal to what 200,000,000 would have had in 1880. In the machine age in which we are living progress is so rapid that we can scarcely keep track of it, much less forecast its future.

Labor-saving machinery where one man does the work of a hundred, electric energy, electric light, the telephone, the railroad, all of which have reached their present development during less than a quarter of a century, have wrought a revolution in human affairs, and still we seem to be only at the beginning. While they have vastly increased our productive power, they have to a still greater extent increased the demand for labor and the opportunity for employment. As I have just stated, in 1880 the United States made 3,800,000 tons of pig iron; now we are making at the rate of over 18,000,000 tons. Then we mined 42,000,000 tons of bituminous coal, or three-fourths of a ton per capita; now we are mining at the rate of nearly 300,000,000 tons, or about 3¾ tons per capita. Ten years hence, even at the present rate of consumption per capita, we shall be mining 400,000,000 tons a year. But with the accelerating rate of consumption per capita it is quite certain that the production then will be 500,000,000 tons a year, provided railroad facilities can be provided rapidly enough to handle it. In 1880 we had 92,000 miles of railroad, mostly laid with light rails; now we have over 200,000 miles, and largely of heavy rails. In the last seven years alone the railroad traffic of the country has doubled, and even to-day nearly every railroad is burdened with

more freight than it can promptly handle. As late as 1890 the total value of our manufactured products was $9,000,000,000 and of our agricultural products $3,000,000,000; now we are turning out $15,000,000,000 of manufactured products and $5,000,000,000 of agricultural products a year, or a total of $20,000,000,000, against $12,000,000,000 a year then.

What we have done in the development of industry, in domestic and foreign trade, in the saving of by-products by the skill of the expert, is but a beginning. We have simply made a good start in laying the foundation for our industrial structure. We have become a world power not by virtue of Manila and Santiago, but by virtue of the fact that we have become the leading power in agriculture, in industry, and in wealth. Midway between Europe and Asia stands this, the most richly endowed continent of earth, with a population of 80,000,000 active, virile people unvexed by the arbitrary laws of differing nationalities as in Europe, the foremost in general education, the foremost in wealth, the foremost alike in manufactures and agriculture of all the nations of the world. Man never before conceived of such possibilities as the future holds out to us. Why, then, should our progress in the next fifty years be less than it has been in the last fifty? And if we only do as well in the coming half century as we have done in the last, the figures which I have suggested, enormous as they are, are not beyond the range of possibilities. The improvement of the Mississippi River, looking not alone to the present, but to the future, should be studied in the light of an advancement so great as to stagger the mind as we attempt to forecast it.

Proper leveeing of the Mississippi River will bring into cultivable condition 30,000 square miles of alluvial soil in Arkansas, Mississippi, and Louisiana alone, upon which, with the prevailing methods, which are by no means the best, may be raised double the present cotton crop of the whole country, which, with its seed and with cotton at 8 cents a pound, would yield $1,000,000,000 annually. The world is crying for more cotton. England and the Continent are seeking to develop its cultivation in the heart of Africa. Even the president of the New England Cotton Manufacturers' Association at its annual meeting a few weeks ago expressed the hope that cotton production might be increased in other countries in order to increase the world's supply. But here is a region which may be reclaimed by national work large enough to produce twice as much cotton as the whole South now grows—a region which could add a billion dollars a year to the agricultural output of the country. That, however, is but a part of the value of this work. Proper leveeing would not simply mean the adding of 200,000,000 acres or more of the most fertile soil in the world to our national domain; it would mean untold wealth added to the region drained by the Mississippi and its tributaries, and thus to the whole country. Can any man imagine that any country in Europe with such an opportunity before it would hesitate for one moment in embarking upon a plan comprehensive enough to measure up to such unbounded possibilities.

When Holland, with its less than 5,000,000 inhabitants, can spend hundreds of millions to reclaim a comparatively small area; when France and Germany and Austria and Russia can likewise spend hundreds of millions in vast enterprises for improvement of waterways; when Manchester can invest $30,000,000 in a canal in order to become

a seaport, and when Mexico and Brazil and Argentina can undertake harbor improvements which cost for individual ports from $10,000,000 to $25,000,000, how can Congress hesitate in assuming the responsibility of building such a levee system as will forever protect the Mississippi Valley from overflows, reclaim 20,000,000 acres of land, forever protect the whole Mississippi Valley region—from the Allegheny Mountains on the east to the Rocky Mountains on the west, and from the Lakes on the north to the Gulf on the south—from the possibility of this great river ceasing to be a mighty highway of commerce and a regulator of freight rates more potent than all the railroad commissions ever devised by State or National Government.

It may be well to bear in mind that those 30,000 square miles are about the same area as that which supports the 4,500,000 population of Holland with 234 persons to the square mile, and the 6,100,000 population of Belgium with 590 persons to the square mile. When we think of that and remember, too, that England has 536 persons to the square mile, Italy 274, Germany 247, France 192, Switzerland 190, and Austria 162, does the time seem so distant when, with an area of more than double that of the combined areas of these European countries, this Mississippi region will have reached the position predicated upon its having but 90 persons to the square mile?

At any rate, its interests are already so stupendous and so intimately related to the interests of the whole land that anything affecting for good or ill the one must in like manner affect the other. The improvement of the Mississippi is a matter vitally affecting all. Its accomplishment upon the lines sketched in the call for this convention means the enhancement, almost inestimable, of American commercial, industrial, agricultural, and social prestige. This is, indeed, a national, not a sectional, problem.

This national character of the problem is no novel or radical conception. It was notably emphasized in the following resolutions adopted by a convention held at Memphis, Tenn., in July, 1845:

"*Resolved*, That safe communication between the Gulf of Mexico and the interior, afforded by the navigation of the Mississippi and Ohio rivers and their principal tributaries, is indispensable to the defense of the country in time of war, and essential also to its commerce.

"*Resolved*, That the improvement and preservation of the navigation of those great rivers are objects as strictly national as any other preparation for the defense of the country, and that such improvements are deemed by this convention impracticable by the States or individual enterprise, and call for the appropriation of money for the same by the General Government.

"*Resolved*, That the deepening of the mouth of the Mississippi so as to pass ships of the largest class, cost what it may, is a work worthy of the nation and would greatly promote the general prosperity.

"*Resolved*, That the project of connecting the Mississippi River with the lakes of the north by a ship canal, and thus with the Atlantic Ocean, is a measure worthy of the enlightened consideration of Congress.

"*Resolved*, That millions of acres of the public domain lying on the Mississippi River and its tributaries, now worthless for purposes of cultivation, might be reclaimed by throwing up embankments, so as to prevent overflow, and at this convention recommend such measures as may be deemed expedient to accomplish that object by a grant of said lands or an appropriation of money."

The president of that convention, which contained about 600 delegates from Pennsylvania, Virginia, North Carolina, South Carolina, Mississippi, Louisiana, Texas, Arkansas, Tennessee, Iowa, Kentucky, Missouri, Indiana, Illinois, Alabama, and Ohio, was John C. Calhoun, of South Carolina. We all recall his pronounced views as to the strict construction of the Constitution, and as to the relation of the General Government to internal improvements. That knowledge strengthens the force of his consideration of the Mississippi River as a great inland sea and of the following statement in his opening address at the convention:

"In relation to the great highway of western commerce at least, the great inland sea of the country—the Mississippi—he did not for a moment question that Government was as much obligated to protect, defend, and improve it in every particular as it was to conduct these operations on the Atlantic seaboard. It was the genius of our Government, and what was to him its beautiful feature, that what individual enterprise could effect alone was to be left to individual enterprise: what a State and individuals could achieve together was left to the joint action of States and individuals; but what neither of these separately or conjointly were able to accomplish, that, and that only, was the province of the Federal Government. He thought this was the case in reference to the Mississippi River."

The Great Channel of National Commerce.

[By Hon. John Sharp Williams, of Mississippi.]

Gentlemen and fellow-citizens of the valley, after the descriptio persona uttered by my friend Charlie Scott, I was somewhat surprised to learn that the lame and impotent conclusion was myself. [Laughter.]

My friends, a great poet has said, in language the exact verbiage of which I can not now recall, that it is a work of great inutility to attempt to paint the lily, to gild refined gold or to add perfume to the violet. After all the discussions which you have heard in this convention, for me to attempt to do anything would be a regilding, a repainting or a reperfuming. [Laughter and applause.] I would either repeat something which had already been said, and repeat it not quite so well as originally uttered, or I should display a woeful lack of information about the technicalities of the situation with which the valley people are confronted.

My friends, a cause in the hands of Charlie Scott, of Tom Catchings, and of Mr. Blanchard and their colleagues from those sections here represented is safe without a word added from anybody. [Applause.] On yesterday somebody came to me and wanted me to vote for a proposed resolution which they said these gentlemen had indorsed. I said: "It is useless to read it to me. I wouldn't know any more about its beneficial effects after I had heard it than I do now. If it has been indorsed by those men it is all right. I am willing to follow them upon any subject, from the purchasing of a hamestring to the organization of a celestial choir." [Laughter and applause.]

My friends, neither by immediately previous study nor by present physical condition am I prepared to enter into an elaborate discussion of the problems with which we are confronted, and even if I were prepared and willing to do so, it would be absolutely useless. It would be useless because I am a child of the valley, and no matter what

political entanglement, no matter what personal associations may surround me, I am never ashamed of being its child, and I shall never forget my parent nor her interests. [Applause.]

It is therefore only necessary for me, I hope, to say that in every relationship in life, private or public, I am with you, with what you want, identical with you in tradition, in sentiment, in aspiration, in purpose, with you in heart and in soul, in strength, in voice and in vote, wherever I am thrown. [Applause.]

A great many people during this convention have described the Mississippi River; it is the great national sewer; it is the great channel of commerce. My friends, it is for the future a great artery, not only a national but an international artery, and within less than 1 mile from where I now stand is the heart from which the artery goes out to the trade channels of the world. The mouth of the Mississippi River is the commercial and industrial center of the world. [Applause.] Look at that map one moment. See how this whole continent converges toward that point. For some time, owing to political reasons or to sectional reasons, commerce has followed eastern and western lines. But, my friends, the natural lines of commerce are north and south and south and north. Organized commerce is but the exchange of products through the instrumentality of a token representative, money, or directly. That exchange of products must be the exchange of divers products, and diverse products are the result of differences of latitude. So that, in the long run, commerce consists in trading off for one another the products of totally dissimilar climates, and hence it follows that it must run along Northern and Southern lines, or, at any rate, perpendicular to isothermal lines, whether they are strictly northern and southern or not. [Applause.]

There is another consideration. There is no great empire which has ever existed which has not been founded upon the alluvial lands of some great river. When civilization first had its birth, way back yonder in prehistoric times (prehistoric in so far as the written record goes, although not altogether prehistoric as far as concerns hieroglyphics and stone-markings), away back in the days of Babylonia and Assyria, their civilization was founded upon the local situation in the valleys of the Euphrates and the Tigris. Later on, when the civilization of Egypt arose, its basis was the Nile, and the civilization of the greatest branch of the English-speaking people, the peace conservators of the world, will center in another great valley, the deposit of another river, the greatest of them all, the Mississippi. [Applause.]

In connection with this question there are some things that perhaps you would like to hear a strict constructionist Democrat express himself about. [Laughter.] By the way, I am very much refreshed now and then to find a question which is nonpartisan; but this is one of those questions. [Applause.] But I have heard some discussion as to that, and so I want to call your attention to the fact that the two greatest strict constructionists or the two strictest great constructionists who have ever lived in this country—the great Carolinian, John C. Calhoun, and the great Mississippian, Jefferson Davis—have both united in the opinion that strict construction itself includes the Mississippi River as part of the burden and part of the duty of the National Government. [Applause.]

My friends, when the Constitution granted to the Federal Government the regulation of interstate and foreign commerce it granted the

two powers under the same clause and upon exactly the same footing. It would seem curious, therefore, that there has never been any question raised as to the exclusive right, the exclusive power, and the exclusive duty of the Federal Government, in connection with the seaports and harbors, the great bearers of foreign commerce, and that yet a question should have been raised in connection with the great rivers, which are the bearers of interstate commerce—both taken away from the States and both vested in the National Government under exactly the same clause.

John Marshall decided long ago, to go to another point, that where it is once admitted that the end was Federal or national, every means necessary or proper toward the attainment of that end was likewise Federal or national.

Now, then, the Constitution has another clause of great importance to a strict constructionist, to a latitudinarian, or whatever else a man may be, and that is the one vesting exclusive proprietary rights in navigable rivers in the United States Government. Why, if I own a disreputable old mule or a breachy hog that will get over the fence and destroy my neighbor's crops, the law holds me responsible for the damage; and when the Federal Government owns the Mississippi River, so absolutely unmanageable by ordinary power as to have elicited from Sargent Prentiss, the great Mississippian, a doubt of the Divine Omniscience, then certainly the Federal Government ought to control it and prevent its ravages. [Applause.] It is nothing but a simple principle of justice which forbids any man, any community, or any nation to permit injury to the property of others by its own property. [Applause.]

You will remember that Sargent Prentiss once said that no man had greater reverence or less blasphemy in his heart than he did, and that he had the highest regard for the Divine Omniscience, but there were three things about which he sometimes doubted whether the Almighty Himself knew in advance what they were going to do. One was a petit jury in arriving at a verdict, another was a woman in selecting a husband, and the third was the Mississippi River in the next bend or cut-off that it might choose to make. [Laughter and applause.]

By the way, here I may utter a little practical sense, as far as I am capable of it, for I have sometimes been accused of being absolutely incapable of it. [Laughter.] It seems to me that the line of procedure immediately before you is almost exactly in accord with what was said by my colleague, one of the most useful members of Congress, Mr. Ransdell, of Louisiana. [Applause.] The Mississippi Valley is a great thing, but every man that comes to Congress has a great thing in his own opinion and in the opinion of his constituents, and which great thing must be attended to, and attended to immediately. I remember myself the time when it seemed to me of the very highest importance that the Buckatunna branch of the ——— Creek, which flows into the ——— River, should be fixed by the National Government. [Laughter.]

My friends, some of these days the great valley between the Alleghenies and the Rockies will hold the political power of this country in the hollow of its hand; but just at present it doesn't. The people of Vermont, the people of New Hampshire, the people from the State of Washington and from the State of Oregon are not going to admit that the lion's share of everything belongs to me and to you. It is therefore necessary always to keep in mind that in order to arrive at an approxi-

mation of what you really want you must let the other fellows have an approximation of what they really want. [Laughter and applause.] You must therefore increase your rivers and harbors bill. [Applause.]

Now, I feel somewhat disposed to make a sort of ad hominem reply to something said by my friend Charlie Scott, who complimented me very highly on yesterday, but whiplashed me just a little while he was doing it. Still, I don't mind a whiplashing from Charlie Scott, because I know it is but the chastisement of an elder brother or of a parent. [Laughter.] I think we might make this proposition to the Federal Government: That they give us one dollar for rivers and harbors for every two dollars which they devote to the maintenance of the fetich worship in the Philippine Islands. [Applause.] They tell us it will require $20,000,000 to finish the levee system upon the Mississippi River. It requires now $140,000,000 a year to maintain the dignity and the world power of the American Union among a lot of naked little brown men in the Philippines. [Laughter and applause.] I apologize for that utterance, however, because it is totally out of place here. [A voice: "Go ahead; you're right."] Nothing but my fraternal affection for my friend Charlie Scott would have elicited it from me.

My friends, let us consider whether the Federal Government has the constitutional power to do what we want. I shall not dwell upon that any more. Has it the financial power to do what we want? Undoubtedly. The Federal Government wastes every year from three to five times as much money as would finish this great work. The work, however, is begun, and it will go on until it is finished, and sitting in my seat there on yesterday, closing my eyes for the time to shut out divergent sights, and turning my ears deaf to everything else, it seemed to me that I saw something away down the vista of the future, and that something was this: The time when the lands in this great valley, richer than those in the valley of the Nile, richer than the lands of Belgium and of England, richer than the valley of the Po in southern Italy, which are worth from $500 to $1,000 an acre, will be worth their full value in the market to the man who works them and to the man who owns them; and in that picture it seemed to me that the National Government had buttressed every concave of the Mississippi River with solid granite. [Applause.] The time will come some day when that will be done, but it is not practical statesmanship now. A man that would go before the next Rivers and Harbors Committee with a granite proposition would be laughed out of Congress as a fool, and deservedly so [laughter], and especially if he wasn't in accord with the idea of the people along Buckatunna Creek. [Laughter.] All these things will come in time, however.

My friends, I was sincere when I said I was neither in a physical condition nor prepared in any way to say much on any line. I hope, however, I will never see the time when I am so unprepared mentally and so weak physically as not to remember that I am a child of the valley, and that my first duty is toward my beloved parent. [Great applause.]

Interrelation of Many Broad Subjects.

[By Hon. George H. Maxwell, executive chairman National Irrigation Association.]

Gentlemen of the convention, I wish to say at the start that the subject of the few remarks which I shall make at this late hour of the day is not to be confined to reservoirs. I think that most of us who

have passed through the process of evolution which finally resulted in the passage of what is known as the national irrigation act, at some time in our experience were under the impression that the construction of reservoirs by the building of dams would largely reduce the floods of the lower Mississippi. I believe that all of us who have given the subject serious thought and study have come to the same conclusion that the result of such a system of reservoirs, if it would have an appreciable effect on the lower Mississippi, would do so at a period so remote from the present that it could not at this time be a solution of the problem of immediate protection from danger of flood in the lower Mississippi Valley.

In saying this, however, I do not yield one iota of the importance of the reservoir theory as the plan for the future, and I came here to-day in the hope and expectation that if a few moments of your time could be accorded to me it might be possible to bring about a better understanding of the relations, not of reservoirs alone, but of the whole irrigation problem and the whole forestry problem to the subject of the levees on the lower Mississippi; so the text of the address which I suggested I would deliver was not reservoirs, but the relation of forestry and irrigation to the levee problem.

I have been more than repaid for the time I have taken to travel here in sitting and listening to the words of wisdom and drinking at the fountains of knowledge that we have all sat and listened to and drank at as we have heard the addresses delivered in this convention. [Applause.] As I have tried to get this great problem into my mind from your point of view, it seems to me, after all, that the purposes of this assembly may be crystallized into two propositions. They have been stated clearly by Senator Berry, but perhaps I can restate them in a way that will make a little clearer how closely your problem is linked to ours of forestry and irrigation.

As I gather your idea and what you want to accomplish, it is this. Mr. Ransdell outlined it when he showed you that the proportionate increase in the river and harbor bill had been 42 per cent and in that for fortifications 2,500 per cent. The position that you and the people of the Mississippi Valley and the people of the whole United States want to take is that the levees which will hold back the demon of destruction at your doors are fortifications. You want to get out from behind the stalking ox of the river and harbor bill and let this country take up the broad proposition of protecting your homes and your lives from destruction as one which has constitutional justification and warrant outside and independent of the question of commerce. [Applause.]

The irrigation question no longer figures in the river and harbor bill, and I am thankful for it. As long as we tried to hook our irrigation car behind the river and harbor train we were where we didn't belong. The irrigation problem, just like the problem of protection from floods, is a great national problem by itself; but the two have such a close relation that it is no more possible to separate one from the other than it is possible to separate the ray of light that comes from the sun at the point where it strikes the earth.

I will give you a few figures merely as an illustration of why the irrigation problem is broader, many times, than the mere question of reservoirs. You are face to face with a serious proposition in your lower Mississippi Valley. I wish that instead of this map which

hangs on the wall we had the one which was distributed here the first day of your convention, which showed the entire drainage basin of the great Mississippi River and its tributaries. If you will look at the figures on the canvas before you you will see that 527,000 square miles out of a total of 1,240,000 drained by the Mississippi River are in the drainage district of the Missouri River. Now, I want to ask you this question: If it be a fact that the great rise in the Missouri River—mark you, not a part of it, but the entire rise—can be held off and kept back, so that instead of coming to you in May it will come to you in August, isn't that something that you want done? I am looking forward to the future. I want to say that you are wise, unquestionably wise, in framing your resolutions to follow the advice of the great captains who have led you to victory before in what I believe to be the greatest legislative victory that ever was won in this country, in linking the Mississippi River flood problem on to the river and harbor bill. I don't believe in swapping horses while crossing a stream. I believe, however, that the inauguration of national irrigation marked a new era in our ational history, and that we are now within a few years of the time when forestry and flood protection will be taken up by our National Legislature as independent questions, as emergency appropriations, and then, instead of having to wait from ten to twenty years for the money necessary to complete your levee system, you will not have to wait five years for it. [Applause.]

But you are face to face with a serious question. Look at the immense basin that your river drains. Is it not an appalling thing to consider that every drop of waste and surplus water that falls from the clouds in that region must find its way to the sea down your river and through one of its mouths at the Gulf—the water that falls over 1,240,000 square miles, or more than one-third of the entire area of the United States?

Now, what was the condition of the great drainage basin I have referred to when the white man's foot first trod it, when Boone journeyed over the mountains into the impenetrable forests of the Ohio Valley, when the great pioneers of the past went over into Illinois through all that vast waste which we have since settled and civilized? There were forests and swamps and sedge grass and prairies, all serving as a vast blanket to hold back the waters that fell and gathered; and it was weeks and months before that massive flood, covering hundreds of thousands of acres, found its way down to the river opposite the place where you now propose to build levees. Go out on the vast plains which drain into the Missouri River, that great basin of 527,000 square miles, where in that long-ago day the grass grew luxuriantly and the mountains were covered with brush and timber. The cattle have beaten that grass down, and the sheep have eaten its roots, so that to-day you have millions and millions of acres of nothing but dust. The forests have been recklessly and wantonly wasted and burned and destroyed, so that you have hundreds and thousands of acres of mountain ranges where once the cloud water fell and trickled slowly down through the trees and underbrush, forming little rivulets and springs, and finally finding its way down to the great river before you, all ravaged and barren, with its vast burden of water pouring instantly down upon you through the Mississippi. Under the conditions that now confront you, you must provide a way for the drainage of 1,240,000 square miles to come through to the sea.

I think you are unquestionably wise in the plans you have made for to-day, and next year, and the year after, and the next ten years; but you will not be wise in your day and generation if you do not recognize the fact that if the conditions which have been going on in the last twenty years continue in the future, you are going to see the time when from over this vast area of drained country the water will flow into your river faster than you can raise your banks, and your levee system will in time prove a failure.

I am here to-day, if for no other purpose, to appeal to you to take time by the forelock. "In time of peace prepare for war." I urge you to join with us in bringing about a national policy which will counteract the influences that have been going on for so many years in that country, and, instead of having a rapid run-off of the flood water, increasing from year to year, you will have a decrease from year to year, so that if you will, within the next ten or fifteen years, complete a levee system that will protect you as conditions are to-day, it will protect you through all the centuries to come, as long as the foot of man shall tread this valley. This is, indeed, well worthy your consideration.

Let us take up the question of irrigation. You have heard what I said about reservoirs. I listened with the utmost interest to what was said by your honorable chairman on that subject, and I want to premise by stating that what I now have to say is not intended in any spirit of controversy or criticism, but only to show you that there is more in this great problem of the irrigation of the arid regions of the Missouri Valley than any man in the Mississippi Valley has ever thought of.

Take the single State of Montana. The Milk River, the Missouri River, and the Yellowstone River join and make one mighty river before it leaves that State. There is water enough passing that line to irrigate 10,000,000 acres of land, and that is not one-eighth of the total area of the State. Mark you the State of Montana is as large as the Kingdom of Japan, and if it were cultivated by some intensive process, if the waters now wasted were utilized for agriculture, it would support as large a population. But to-day Montana has 200,000 population and Japan 40,000,000.

It is a mistake to assume that the reservoir system is the irrigation system, because it is but a trifling part of it. The great canals interlacing here and there in every direction are reservoirs, but the greatest of all reservoirs is the land itself, into which the water is poured, to find its way back in the seasons of the year when it is needed.

Your floods don't last long. If you could take off the crest of the flood 4 or 5 feet and hold it back thirty or sixty days the danger is past. Now, no one believes that the Missouri causes the floods of the Mississippi, but if you could check and hold back the Missouri and the upper Mississippi and the Ohio, wouldn't it be worth your while? Don't you think you ought to turn your attention to bringing about a national policy to do that? The first thing to be done in that direction is to maintain the forests that grow on and cover the hills and the mountain sides.

I have learned by experience that there is a mighty mass of water in the Mississippi that doesn't come from the Missouri. I started to attend the trans-Mississippi Congress some three years ago, but the train was stopped at McComb City by an overflow which didn't come from the Mississippi. It came from the east.

Now, do you know that your lumber companies are stripping the mountain sides in Mississippi and Tennessee, and that they are going to make them as bare as the western slopes are to-day if nothing is done to restore the timber growth? That will intensify the flood conditions here, and it is only one illustration of it. This great forestry problem stretches all around the country, from the State of Washington to Arizona, from Arizona to Texas, from Texas to Louisiana, and thence on up the Atlantic coast to Maine and back to Washington. It is, of all the great problems of this nation, the one crying the loudest for national support, national aid, and national solution. There is no such thing as localizing it; and I say to you that you can do nothing to so much nationalize your levee problem as to couple it with the great forestry movement. Have your levees built, get your appropriations, but do it as a part of the great movement which will include appropriations to restore and preserve our forests on the hillsides and on the mountain sides all over this vast area.

Now, as to the Ohio River. This morning I asked a delegate from Pittsburg whether, in his judgment and from his information, it was possible, by a system of reservoirs in the Allegheny Mountains, to materially reduce the flood height of the Ohio. He said he believed it was. Now, if that be so, it might well be that, as a matter of flood protection alone, it would not pay to build those reservoirs. It might not have a sufficient appreciable effect on the floods to warrant building the reservoirs for that purpose alone, but don't you realize that the great coming source of power in this country is water power for the development of electricity? They are transmitting electric power n California to-day from Yuba County to San Jose, a distance of 100 miles, to light that city, while Los Angeles receives part of its power and light from a source 80 miles distant. There is not a single gorge or canyon created by nature in the whole basin of the Ohio where a dam can not be built which, within the next ten or twenty years, will develop in the furnishing of power a sufficient revenue to amply pay for its building. If forestry were looked upon to be, as it is, as important a matter as the Army, the Navy or any great work of national defense taken care of by the Government, and if the National Legislature would undertake reforesting and the protection of the existing forests in a comprehensive and effective way the water that would be held up and stored along the valley of the Ohio would measurably affect and diminish the floods that come down that river into the Mississippi.

The question of irrigation is getting to be better understood than it was a few years ago. We are getting to understand that the work is worth more than it costs, year by year, dollar by dollar, to the dairymen of Wisconsin and Minnesota as well as to the farmer of Illinois, Iowa, and Nebraska, and as soon as the profits derived from irrigation become even better appreciated, it will only be a question of a short time before the farmers of the vast territory which drains into the Mississippi River above Cairo will be utilizing as much of that water as they can hold back for the purposes of irrigation.

These are facts you have not given a thought to, and yet you will find, if you study the proposition, that there is a great field there—not to avoid the necessity for levees, not as a substitute for levees, but to counteract the evil that has been going on for many years in increasing the rapid annual run-off of the waters from this great area,

and for which you must always furnish a waste-way here at the mouth of the Mississippi and through this lower valley below Cairo.

As I stand here and tell you all these things, you will say that I am very presumptuous to talk in this way; but in the last three years we have worked out in the national irrigation movement as great a problem as yours, and even greater. Three years ago the idea that the Government of the United States would ever deliberately undertake the duty and the obligation of reclaiming the arid region was looked upon as an Utopian dream. Yet to-day it is an accomplished fact, and I believe that if you would work along the same lines that brought us success you would not only accomplish what I believe to be the first thought in your minds to-day, but you would have your levees put upon the basis of fortifications, which would enable you to get your appropriations just as rapidly as the work was extended, and that it would also result in the adoption of a great national policy of forestry and irrigation, of which reservoirs are but a small part of a great whole, which would absolutely insure you against any increased exaggeration of the conditions leading to the present rapid run-off of floods with which you have to contend.

Now I am through, with the exception of one or two matters which I desire particularly to bring to your attention. One of them is that the success of our movement was due purely and solely to the inauguration and carrying on of an educational campaign. We took the ground, which was no more true of the arid regions than it is of your submerged areas, that agriculture was the basis of our national prosperity; that every new farm created added to our national resources, and that the protection of the farms of this country, whether from fire or from drought or from floods, was just as much a national duty and called for just as strenuous and quick action as the building of battle ships to carry our flag upon the sea. [Applause.]

In other words, the next session of Congress is asked to appropriate $100,000,000 for our Navy—and who regrets it? Every patriotic citizen of this nation approves it. And yet, is not the great problem of the protection of our farms from drought or from flood just as important a proposition as the building up of a navy? If you will ever undertake, in the broad way that we undertook and succeeded in, to strike right at the very nerve center of this great nation, and to touch its great patriotic heart, you will have no trouble in getting for your levees all the money you want just as fast as it can be judiciously spent. [Applause.] And upon that line there is nothing you can do that will give more strength to that movement than to become a part of the great forestry movement, and to become a part of the great irrigation movement. We don't want any more money for irrigation for a long time to come, and all we ever did get we propose to pay back. [Applause.] In other words, every dollar that the Government will be asked to expend in the arid regions to reclaim those lands will be paid back by the lands that are reclaimed. Our position is that if the time has not come when the lands will pay it back, then the time has not come to reclaim the lands.

We have $16,000,000 now in the reclamation fund for construction work. The trouble is not lack of money, but the devilish ingenuity of the western land grabber, who is distorting and abusing the present land laws, the stone and timber act, the desert-land act, and the commuta-

tion clause of the homestead act; who is boldly attempting to steal and take away the heritage of the people of the nation long before the Government can build the works necessary for its reclamation.

We demand something which is of as much interest to you as it is to us, and we ask your help, not only on our own account, but because it is your problem as well as ours. We say that where the Government owns the forest lands it should never part with the title to them, but should sell the stumpage to the mill men, disposing of the matured timber as fast as they need it and preserving the young timber until it matures in later years. In this way, instead of entirely using up our timber supply in forty years, we will leave posterity to cut timber from the same lands for thousands of years from now. [Applause.]

If this is to be done, the timber and stone act must be repealed, and that is what we want you to help us bring about.

There is another plank upon which we want you to stand with us. We say that wherever there is a section of 160 acres of land in that arid region upon which water can be put so as to enable a settler to make a living out of it, no one should have that land unless he goes on it and builds a home and stays there for five years; and no man lives who can stand up and justify any other policy. Yet, what is the law to-day? Under the desert-land act he simply puts his foot on the land, makes his filing, does nothing to found a home or settle upon the land, and finally sells it to some of these land grabbers who are continually seeking to distort our land laws themselves in this way. What is the result? It is the creation of great estates out there in the West, where thousands and thousands of acres have become absorbed in one great ranch, and the barbed-wire fence bars out the settler.

We want that law to be repealed, and we want the Government to stand upon the proposition that every acre of irrigable land to be reclaimed shall be for the actual settler who will go out and live there and make a home on the land.

We want the commutation clause of the homestead act to be repealed. That clause permits the speculators and the stockmen to absorb into great ranches for grazing purposes only and prevent settlement on hundreds of thousands of acres by what are called "hobo" filings. Men who have no thought of making a home on the land file on it, and at the end of fourteen months they get a title by paying $1.25 an acre for the land, and then sell the land to some speculator or stockman.

In his last message to Congress President Roosevelt pointed out the evils of these laws when he said:

"In their actual use the desert-land law, the timber and stone law, and the commutation clause of the homestead law have been so perverted from the intention with which they were enacted as to permit the acquisition of large areas of the public domain for other than actual settlers and the consequent prevention of settlement."

I want to say to you people of the South, who stood so nobly by us when we were asking for the passage of the irrigation act, that it would not be on the statute books of the nation to-day had it not been for the generous aid of the people of this section. We ask you now to stand with us again; stand with us even against some of the Senators and Congressmen of the West, who seem willing, unfortunate as it may be, that these laws whose repeal we demand should still disgrace the record of our country's legislation.

One word more, and I am through. I said that it would be wise for

you to join with and be a part of the great forestry movement and the great irrigation movement, and I believe it. We are sowing the country with educational literature. We want to attract the attention of every newspaper and every man of this country to our cause. We want them to get into the way of thinking and knowing that all these great internal improvements, whether it be the building of levees on the Mississippi, the construction of reservoirs in Montana, the planting of forests on the sand hills of Nebraska, the reforesting of one section and the preservation of the forests in another—that they are all part of one great problem; that they all alike concern and involve the general welfare of the entire country. We are helping you all we can; we are glad to have the opportunity of extending our aid in exchange for the aid that you have extended to us. But you can do much to help yourselves in the future by coming in and joining us in our work; by becoming members of the National Irrigation Association and of the Trans-Mississippi Commercial Congress, and by attending the National Irrigation Congress. This great region should be represented in those bodies, not by a few straggling delegates, but by large State delegations from every Commonwealth in Dixieland.

On my arrival in New Orleans I met a gentleman sent here from El Paso, Mr. Stevenson. He has asked me to present to you the invitation of the people of that city to have the whole Mississippi Valley represented at the next Irrigation Congress, which convenes in El Paso in November, 1904. I say that it is to your advantage that you should go. I was present, and I may say I drew up a large part of the resolutions that were adopted at the last Trans-Mississippi Commercial Congress, which was held in Seattle last August. We planted ourselves there upon a broad platform that we believe every man in this Mississippi Valley will stand upon with us, because it includes not only the proposition of forest preservation, not only the question of reservoirs, not only the subject of construction of great canal systems, but it likewise included the matter of the protection by levees of all this country that needs protection, and that at once. It helps you to have your project brought before a great convention of that kind, and indorsed not only by a specific resolution, but by a general declaration of policy as broad as that.

So I say we would like to see you attend these conventions in the future, because you will help yourselves by it. I would like to see at the El Paso Irrigation Congress as many delegates from this section as are present here to-day.

It is a remarkable thing to observe how interest in this question of irrigation has grown. A few years ago we thought we were in the biggest kind of luck if we had an attendance of delegates at our meeting of from 200 to 400, but in August at Ogden we had 1,300 delegates, and at El Paso we expect 2,000 and more. The people of this country have waked up to the fact that the cultivation of the arid regions and the protection of the Mississippi Valley are great national problems, and no longer sectional issues.

There is one more suggestion that I want to make. I was told here that your sugar crop was short because of the drought. Now, I crossed your Mississippi River on my way to Arizona last March, when the water was so close to the top of the levees that I didn't see how you kept it from running over. That great highway was full of water, and yet your fields were needing moisture. It seems to me your engineers

ought to be able to devise some system under which you could get the use of a part of the immense volume of water that goes to waste in the Mississippi for the irrigation of your fields and their enrichment by irrigating the land with the silt-bearing water from the river.

Out on the Colorado River the Government has sent out its surveyors, and they are now engaged in planning for that valley a great system of irrigation works. The Agricultural Department, presided over by Secretary Wilson, who addressed this convention last night, has made a careful investigation, and they find that the actual cash value of the silt as a fertilizer is, I think, $5 an acre per year.

We know that the fertility of the Nile Valley has continued through centuries because the land is constantly rejuvenated by the deposits of silt from the river water. I believe if you go on and complete your levee system as you desire to, and if your levees hold intact, in less than twenty years you will be clamoring for some system which will enable you to get the silt from that water on your lands for the purpose of the fertilization of your farms and plantations.

I want to thank you for the patience with which you have listened to me. I did not intend to talk so long, but I got interested and you seemed to be interested, and I have taken more time than was my first purpose. I thank you very much for your close attention and cordial interest in this subject. [Applause.]